WASTE RECYCLING STRATEGY
CIF No. 324

Prepared for:

BRUCE AREA SOLID WASTE RECYCLING

GAMSBY AND MANNEROW LIMITED
CONSULTING PROFESSIONAL ENGINEERS
GUELPH – OWEN SOUND – LISTOWEL – KITCHENER – EXETER

August 2012
Our File: 210314

Gamsby and Mannerow
ENGINEERS

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1.0 INTRODUCTION

This Waste Recycling Strategy (WRS) was initiated by Bruce Area Solid Waste Recycling (BASWR) to develop a plan to increase the efficiency and effectiveness of the current recycling programs and maximize the amount of blue box material diverted from disposal. Specifically, the purpose of this recycling plan is to improve service, use and cost efficiency, and increase the site life of the municipal landfills through adoption of 'Best Practices'. This plan will help build upon BASWR's commitment to the environment and create the opportunity to receive increased funding from Waste Diversion Ontario (WDO), as funding distribution is increasingly dependent on the performance of the BASWR's recycling program and adoption of 'Best Practice' initiatives.

This WRS was developed with funding support from the Continuous Improvement Fund (CIF) and using the CIF's *Guidebook for Creating a Municipal Waste Recycling Strategy,* March 2010 (Guidebook). This WRS generally follows the format structure of the template provided within the CIF Guidebook.

2.0 WASTE MANAGEMENT ROLES

BASWR is a not-for-profit organization established in 1990 by the former Towns of Southampton and Port Elgin (presently the Town of Saugeen Shores) to provide blue box recyclables collection and processing services for the municipal members from which it was established. Since 1990, BASWR has expanded its service area in the County of Bruce and currently includes the following municipalities:

- Municipality of Arran-Elderslie
- Municipality of Brockton
- Township of Huron-Kinloss
- Municipality of Kincardine
- Town of Saugeen Shores
- Municipality of South Bruce
- Town of South Bruce Peninsula

BASWR provides curbside collection of blue box recyclables to all residents of the member municipalities. BASWR also services municipal blue box recycling depots and provides contract collection services for industrial, commercial and institutional (IC&I) customers. The blue box recyclables collected by BASWR are processed for market at BASWR's materials recovery facility (MRF) located in the Municipality of Saugeen Shores. BASWR also provides contracted curbside collection of garbage for the Municipality of Kincardine and the Township of Huron-Kinloss.

For municipal collection and processing service, BASWR is directly funded by its member municipalities. Under this scenario, BASWR does not control funding allocation or municipal programs and policies.

Residual residential solid waste and other diversion programs not related to blue box recycling are managed separately by the member municipalities as each municipality controls their own waste management policies and associated programming.

Currently, residential residual waste generated within the member municipalities is disposed of at their own municipal landfills. Collection of curbside garbage is contracted out by all the municipalities with the exception of Saugeen Shores who carry out their own curbside collection.

3.0 OVERVIEW OF THE PLANNING PROCESS

This WRS was prepared by Gamsby and Mannerow Limited in consultation with BASWR.

In developing the WRS the following steps were completed:

- A review and an evaluation of the current system.
- Estimating the amount of material available for recycling and capture rates.
- Assess current trends, practices, and future needs.
- Develop a preferred inventory of potential alternative recycling diversion options.

4.0 STUDY AREA

The study area for this WRS includes the following municipalities:

- Municipality of Arran-Elderslie
- Municipality of Brockton
- Township of Huron-Kinloss
- Municipality of Kincardine
- Town of Saugeen Shores
- Municipality of South Bruce
- Town of South Bruce Peninsula

This WRS generally focuses on the residential sector.

5.0 PUBLIC CONSULTATION PROCESS

The consultation process followed in the development of this WRS consisted of the following activities:

- interviews with BASWR, and
- hand-out questionnaire to municipal members.

A copy of the questionnaire is presented in Appendix B.

Provided below are some of the comments provided by the municipal members. It is noted that a number of the comments are not considered to be applicable to BASWR, but are rather more applicable to the municipal members. Therefore, the comments have been separated based on the responsible party for which the comments apply. In some cases the comments may apply to both parties.

Table 1: Municipal Member Comments

BASWR
• Increase number of materials that can be recycled • Commingled collection • Inclusion of clam shell packaging to the recycling program is a great addition • Continue seeking end markets • Materials for recycling becoming windblown at curbside in rural areas • Use different style blue box that is larger with compartments
Municipal Member
• Lack of public education and enforcement • Provide reuse centre • Lack of public commitment • Make diversion more of a priority for municipalities • Implement clear bags and inform residents more • Advertise municipal diversion rate to public with incentive for improvements • Mandatory recycling By-law • Increased tipping fees for unsorted waste
BASWR/Municipal Member
• Increase recycling opportunities at events • Need curbside pickup of cardboard • Educate primary school students (currently being done)

6.0 STATED PROBLEM

Management of municipal solid waste, including the diversion of blue box materials, is a key responsibility for all municipal governments in Ontario. The factors that encourage or hinder municipal blue box recycling endeavours can vary greatly and depends on a municipality's size, geographic location and population.

The key drivers that led to the development of this WRS include:

- Opportunity to improve recycling service and convenience for residents
- Opportunity to increase service efficiency and minimize costs
- Increase funding through optimizing the recycling program and adopting 'Best Practice' initiatives
- Environmental conservation

7.0 GOALS AND OBJECTIVES

The goals and objectives identified as part of the WRS are presented in the following table:

Table 2: Waste Recycling Goals and Objectives

Goals	Objectives
To maximize diversion of municipal solid waste through the recycling program	• Divert 34% of municipal solid waste through the blue box program by 2015
To maximize capture rates of blue box materials through existing and future programs	• Meet WDO capture rate of 70% of available recyclables through the blue box program by 2015
To minimize costs of recycling in our community	• Maintain recycling costs at or below the provincial average

8.0 CURRENT SOLID WASTE TRENDS AND PRACTICES

8.1 STUDY AREA CHARACTERISTICS

According to the data provided through the WDO municipal datacall, in 2010, BASWR serviced a population of 63,304 with a total of 32,914 single family households, of which 6,023 households were occupied by seasonal residents. No multiple family households are reported for the service area although it is known that a limited number of multiunit residential buildings exist in the area. The total service area is approximately 3,200 kilometres square with an average population density of 10.5 people per square kilometre. The region is largely rural with developed areas focused along the shorelines and in hamlets and towns.

8.2 CURRENT WASTE GENERATION AND DIVERSION

For the purpose of this report, the average waste generation rate from 2006 to 2010 has been used to determine diversion rates and benchmark values. This is due to the variations in waste generation rates reported through the WDO municipal datacall over the last five years. On the contrary, the reported recyclable tonnage has been relatively consistent. Therefore, the 2010 tonnages for blue box recyclables have been used to determine diversion rates.

From 2006 to 2010, the municipalities serviced by BASWR have generated an average of 15,234 tonnes of residential solid waste per year. In 2010, BASWR diverted 3,863 tonnes of blue box which equates to a diversion rate of approximately 25%.

Table 3: Blue Box Diversion Rates

Residential Blue Box Material	Tonnes Diverted	Percent of Total Waste
Total Waste Generated	15,234 (1)	-
Papers (ONP, OMG, OCC, OBB and fine papers)	2,654	17.4%
Metals (aluminum, steel, mixed metal)	339	2.2%
Plastics (containers, film, tubs and lids)	401	2.6%
Glass	468	3.1%
Total Blue Box material diverted	**3,863**	**25.3%**

(1) Average waste generation from 2006 to 2010.

As shown in the table below, paper based material such as boxboard, cardboard, news print, etc. accounts for almost 70% of blue box material recycled and glass, metals and plastics account for approximately 10% each.

Table 4: Diversion Rates of Blue Box Materials

Blue Box Material	Percent of Total Waste Generated	Percent of Diverted Blue Box materials
Papers	17.4%	69%
Metals	2.2%	9%
Plastics	2.6%	10%
Glass	3.1%	12%

8.3 MUNICIPAL PERFORMANCE

To complete an evaluation of BASWR's performance, the diversion rate for the region is compared to their grouping (*Rural Regional*) and the provincial average. The grouping of *Rural Regional* is a group of municipalities as developed by WDO with similar characteristics that includes BASWR. Diversion data for the grouping and the province are published by WDO.

Table 5: Blue Box Diversion Performance Comparison

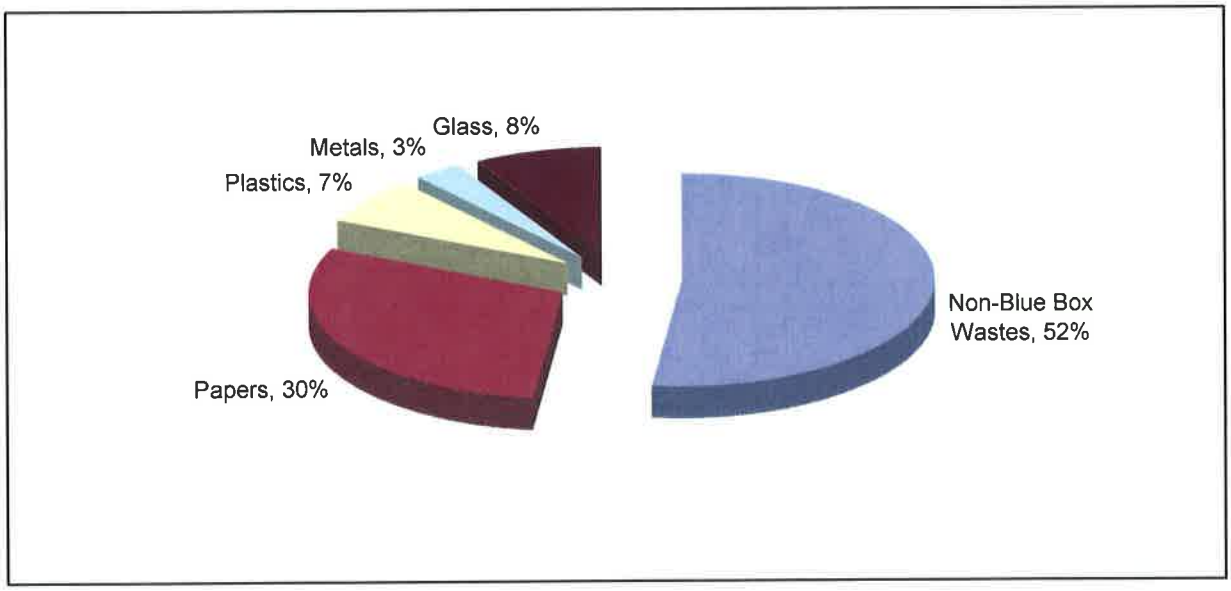
Grouping	Diversion Average
Bruce Area Solid Waste Recycling	25%
Grouping – Rural Regional	20%
Provincial	19%

As shown in the table above, BASWR's blue box diversion rate is above that of their grouping and the provincial average. Based on these results it appears that BASWR's blue box program is performing relatively well.

8.4 Potential Waste Diversion

To estimate the recyclable blue box materials available within the region serviced by BASWR, approximations from waste audit data for the County of Simcoe were used. These approximations are taken from the CIF Guidebook. The Guidebook contains waste composition approximations for several municipalities which are based on single-family waste audit data collected from the Stewardship Ontario's Waste Audit program. The waste composition approximations for the County of Simcoe were used based on the regional service area aspect and the similarity of recyclable blue box materials collected by the two regions.

Figure 1: Residential Composition of Waste



Assuming similar compositions of available blue box materials for BASWR as for the County of Simcoe, a total of 7,312 tonnes (48% of 15,234 tonnes of total waste generation) of blue box recyclable material is available for diversion. In 2010, 3,863 tonnes of waste was diverted through BASWR's blue box program. Assuming a waste composition of 48% blue box recyclables, approximately 3,449 tonnes of recyclables remain in the waste stream. Estimates of blue box material available for diversion are listed in the following table.

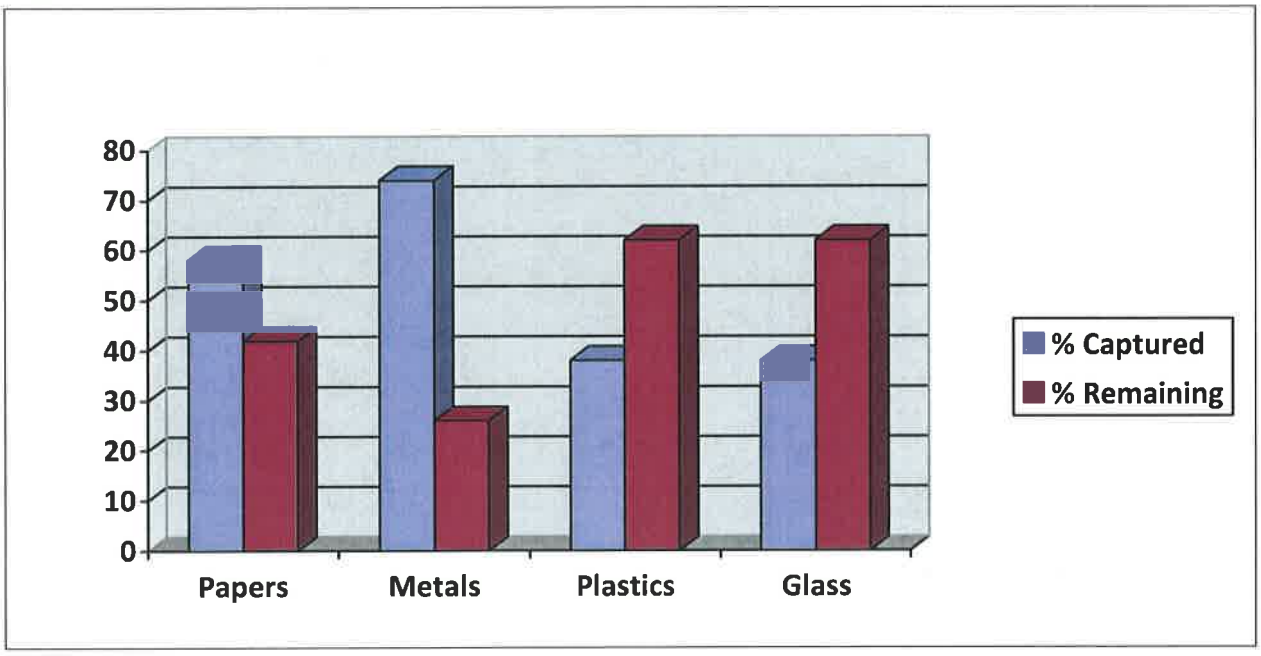
Table 6: Current and Potential Diversion

Material	Total Available in Waste Stream (tonnes/year)	Available Recyclables Captured		Recyclables Remaining in Waste Stream	
		Tonnes	%	Tonnes	%
Papers	4,570	2,654	58%	1,916	46%
Metals	457	339	74%	118	26%
Plastics	1,066	401	38%	665	62%
Glass	1,219	468	38%	751	62%
Total	7,312	3,863	53%	3,449	47%

In 2010, BASWR's average capture rate of available recyclables in the waste stream was estimated to be 53%. This capture rate is 18 percentage points below the current WDO target of 70%. At the time of this report, there was no capture rate data available for the municipal grouping or the province. However, based on BASWR's blue box diversion rate, BASWR's capture rate is likely higher than that of the municipal grouping or the province.

As illustrated in the graph below, BASWR is achieving its greatest capture rates with papers and metals, and its poorest capture rates with plastics and glass.

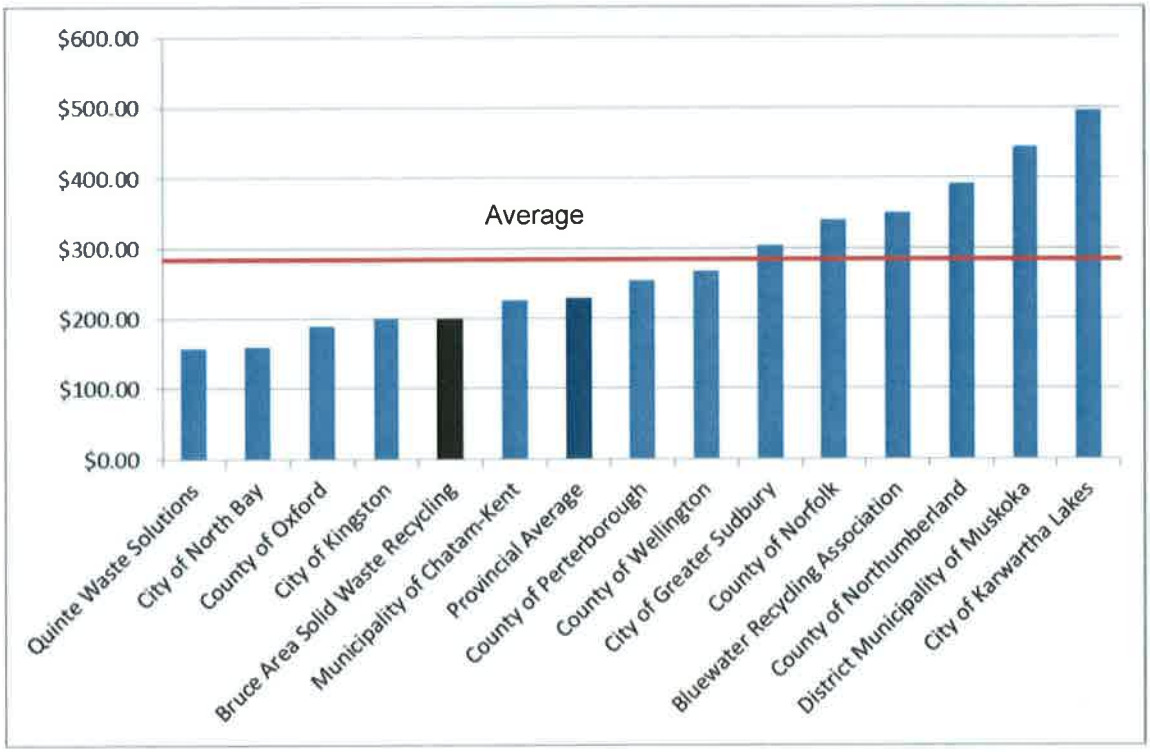
Figure 2: Estimated Available Recyclables Captured/Remaining in Waste Stream



8.5 EXISTING PROGRAMS AND SERVICES

Disposal and recycling services are paid for primarily through the tax base, bag tag revenue tipping fees, recyclables revenue, and grants. In 2010, the net cost of the blue box recycling program for the region was reported to be $768,179, which equates to approximately $200 per tonne. These recycling costs are below the Rural Regional grouping average and the provincial average. Illustrated in the figure below are BASWR's recycling costs compared to those of the other regional blue box programs in their grouping and the provincial average.

Figure 3: Net Recycling Costs per Tonnes



Collection services of regular waste are provided to the residents of BASWR's service area using contracted or municipal curbside service. Disposal through drop-off at municipal landfills is also available. BASWR provides curbside collection services for blue box recyclables to all residents within the member municipalities (with the exception of rural residents in the Municipality of South Bruce). Residents can also drop-off blue box items at their municipal landfills. The recyclable materials collected within the member municipalities are transported to BASWR's MRF in the Town of Saugeen Shores for processing.

The current list of recyclable blue box items accepted through curbside collection is included in the following table.

Table 7: Recyclable Blue Box Materials

Metal	
• Food tins and pop cans • Aerosol and metal paint cans • Aluminum foil and trays	
Plastic	
• # 1 to #7 plastics including: • Plastic screw top bottles • Plastic tubs • Rigid plastic packaging • Plastic Pails • Single serve plastic cups	
Glass	
• Bottles and jars	
Paper	
• Newspapers and inserts • Magazines • Catalogues • Office paper • Construction paper • Envelopes (with the plastic windows removed) • Paper and hardcover books (hardcover removed)	• Telephone books • Paper bags • Spiral boxboard • Box board (cereal, frozen food, tissue boxes, etc.) • Paper egg cartons • Greeting cards • Gift wrap

Corrugated cardboard is not accepted through curbside collection, but can be dropped-off at a local landfill for recycling.

Collection frequency and bag limit/user pay programs vary between municipal members. Due to the multiple municipalities that BASWR services, the programs in place vary within the service area between municipal members. Provided in the following table are the programs in place with respect to bag limits and user pay programs by municipality.

Table 8: Current Bag Limit/User Pay Programs

Municipality	Program	Collection Frequency
Arran-Elderslie	2 bags (at no charge); additional bag $3.00	Weekly
Brockton	$1.50 per bag; clear bag	Biweekly
Huron-Kinloss	$2.00 per bag ; clear bag (Lucknow only)	Weekly
Kincardine	26 bag tags/year (at no charge); additional bag $2.00	Weekly
Saugeen Shores	$2.00 per bag	Weekly
South Bruce	$2.00 per bag	Weekly
South Bruce Peninsula	1 bag (at no charge); additional bag $1.50	Weekly

For comparison purposes, the blue box recyclables collected on a per person basis for 2010 has been completed for each municipality. The purpose of this comparison is to give a general idea of the performance of each municipality within the service area. Presented in the table below, are the population, household and blue box figures for each municipality. In order to provide an accurate assessment for each municipality, the seasonal population and contributions have been taken into account for each municipality by using the WDO formula for calculating the seasonal to permanent population equivalent.

The WDO calculation for the seasonal to permanent population equivalent is based on the assumption that 6 seasonal households would generate the equivalent annual volume of refuse expected from 1 permanent household and that there are 2.5 people per permanent household on average. For example, Saugeen Shores has a permanent population of 11,720 people and 1,719 seasonal households. At a recyclables generation rate of $^1/_6{}^{th}$ of a permanent household with 2.5 people, this equates to a permanent equivalent population of 716 people and a total contributing population of 12,436.

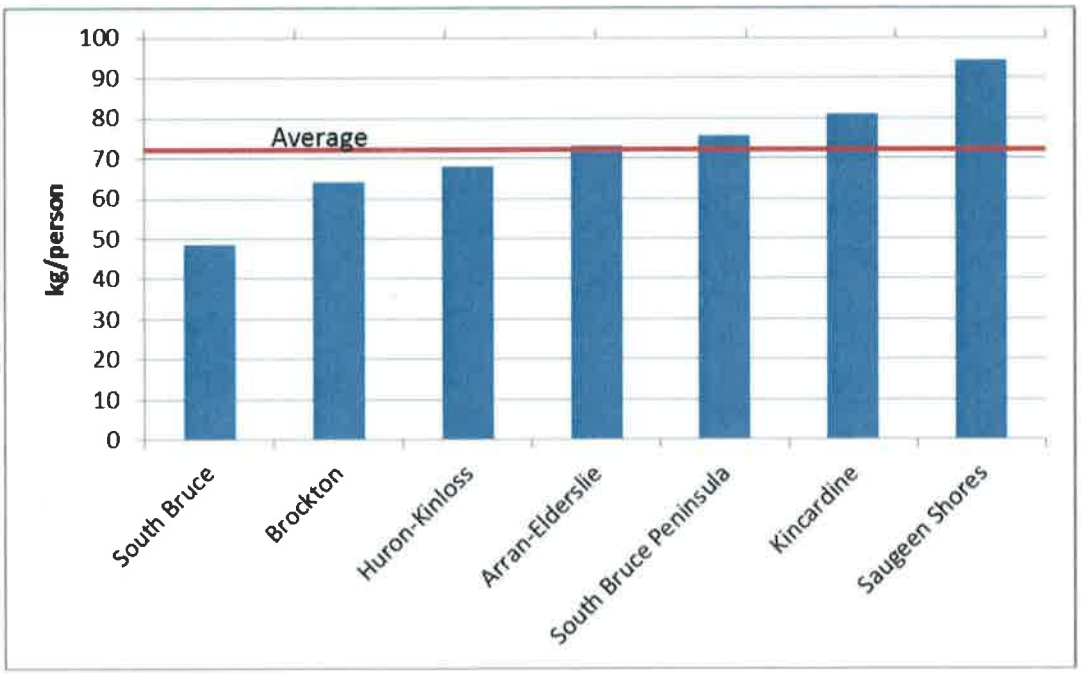
Table 9: Contributing Population

Municipality	Households			Population			Blue Box Recyclables Collected	
	Total	Permanent	Seasonal	Seasonal to Permanent Equivalent	Permanent	Total	Tonnes	Kg/Person
South Bruce	2,297	2,155	142	59	5,939	5,998	292	49
Brockton	4,064	3,739	325	135	9,641	9,776	628	64
Huron-Kinloss	3,759	2,473	1,286	536	6,515	7,051	480	68
Arran-Elderslie	2,791	2,610	181	75	6,747	6,822	498	73
South Bruce Peninsula	6,759	3,581	3,178	1,324	8,415	9,739	735	76
Kincardine	5,447	4,586	861	359	11,173	11,532	935	81
Saugeen Shores	6,645	4,926	1,719	716	11,720	12,436	1,172	94
Average								72

(1) Population and household data was obtained from the Statistics Canada, 2006 Community Profile Data Tables

As shown in the previous table, the average blue box recycling rate was 72 kg per person in 2010. Saugeen Shores had the highest recycling rate at 94 kg per person and South Bruce had the lowest recycling rate at 49 kg per person. The blue box recyclables collected on a per person basis for each municipality is illustrated in the figure below.

Figure 4: Recyclables Collected per Person by Municipality



8.6 ANTICIPATED FUTURE WASTE MANAGEMENT NEEDS

Based on historic trends, it is anticipated that the population will increase slightly while residential solid waste generation, on a per capita basis, will remain similar over the next 10 years. Therefore, overall waste generation within the region is anticipated to increase proportionally with the population.

8.6.1 Projected Population

The most recent population data reported in the WDO municipal datacall for the region served by BASWR is 63,304 for the year 2010. The WDO municipal datacall population data is available back to 2006, at which time the service population was 59,236. This represents an increase in service population of approximately 1.75% per year. By applying this growth rate and using the linear regression model, the projected permanent population for 2011 and to the year 2021 has been estimated.

It should be noted that the population estimates take into account the seasonal population contribution as discussed in Section 8.5, as this is considered to provide a more accurate estimation of the projected user base.

Table 10: Contributing Population Projection

Year	Service Population
2006	59,236
2011	64,604
2016	70,458
2021	76,843

8.6.2 Projected Waste Generation Rates

Based on the population growth model and the current per capita residential waste generation rate, it is anticipated that annual solid waste generation will be approximately 20,000 tonnes per year by 2021. This is based on an average waste generation of approximately 240 kg per person per year. This is calculated by dividing the average waste generation over the last five years (15,234 tonnes) by the contributing population for 2010 (63,304). The table below summarizes the projected solid waste generation rates and estimated available blue box materials.

Table 11: Projected Solid Waste Generation Rates and Available Blue Box Material

	2011	2016	2021
Population	64,600	70,500	76,800
Total Waste (tonnes) (1)	15,500	16,900	18,000
Blue Box Material Available (tonnes) (2)	7,400	8,100	8,900
WDO Target of 70% Capture Rate	5,200	5,700	6,200

(1) Assumes a waste generation rate of 240 kg per person per year.
(2) Available blue box material = 48% of total waste based on waste audit data for the County of Simcoe.
(3) Figures are rounded off to the nearest hundred.

9.0 RECOMMENDED DIVERSION OPTIONS

A number of diversion options were reviewed for consideration in the recycling plan for BASWR. Each diversion option was scored based on a number of criteria which included the following:

- **Waste Diversion Potential** – This refers to how much waste an option may potentially help to divert. Some options may divert more waste than others, while other options may not directly divert waste but instead support other programs or initiatives that do.

- **Proven Results** – Some options are considered proven, while others may be newer with less documentation regarding their efficacy.

- **Economically Feasible** – This refers to whether an option is economically feasible for the organization considering it. BASWR and the member municipalities will need to weigh the cost of the option against their ability to afford it and the resulting benefit.

- **Accessibility to Public** – This considers if the option will be easy or difficult for the public to access or use. This will depend in large part on how the option interfaces with the target user.

- **Ease of Implementation** – Some options are less costly and easier logistically and politically to implement than others. This criterion considers the level of cost and effort involved in implementing the option.

A summary of the diversion options and their scoring is provided in Appendix A.

Based on the scores, the diversion options were divided into two categories; Priority Initiatives and Future Initiatives. Diversion options, scoring 80 and above, are considered Priority Initiatives, and diversion options, scoring 79 and below, are considered Future Initiatives. The Priority and Future Initiatives are presented in the following Sections.

9.1 PRIORITY INITIATIVES

9.1.1 Municipal Member Policy Development

It is recommended that the policy based initiatives be implemented throughout all municipalities within the service area. A consistent policy base between municipal members allows for easier implementation of policy based recycling initiatives (e.g., bag tag fees, mandatory recycling by-laws, clear bags, etc.) as public acceptance may increase when such policies are implemented across a region as opposed to one municipality at a time. A consistent policy base may also allow for easier enforcement by collection personnel and result in a higher degree of commitment from service users.

9.1.1.1 Mandatory Recycling By-Law

A mandatory recycling by-law discourages residents from placing recyclables in their garbage. This can be enforced at the curb, and disposal service can be withdrawn when users continually place recyclables in the garbage. This approach is commonly implemented with a clear bag policy to aid in enforcement. This is enforced at the curb, and disposal service can be withdrawn to users who repeatedly place recyclables in the garbage.

9.1.1.2 Full User Pay

A full user pay system is becoming the most common user pay structure, where each bag placed at the curb is required to have a bag tag that was purchased by the user. A full user pay system as oppose to a partial user pay system, where residents are issued free bag tags or allowed one free bag per week for example, further encourage residents to divert more recyclable materials. Fees gained through bag tag revenue can help subsidize the rising costs of waste management.

9.1.2 Promotion and Public Education Program

Promotion and public education (P&E) programs are crucial for ensuring the success of local recycling programs. Well-designed and implemented education and promotion programs can have impacts throughout the municipal recycling program, including participation, collection, processing, and marketing of materials. Furthermore, having a P&E plan contributes toward the amount of WDO funding a municipality receives as identified in the best practice section of the WDO municipal datacall. For example, benefits of promotion and public education programs include:

- Greater participation levels and community involvement
- Higher diversion rates
- Less contamination in recovered materials
- Lower residue rates at recycling facilities

Stewardship Ontario has prepared a Recycling Program Promotion and Education Workbook and other materials. These are available on Stewardship Ontario's Recyclers' Knowledge Network (http://www.stewardshipontario.ca/service_providers).

To save costs, promotion and education programs could be developed collaboratively between the municipalities under the recycling program. This would avoid duplication of efforts and provide a more comprehensive program.

9.1.3 Training of Key Program Staff

A well-trained staff can lead to greater cost and time efficiencies and improved customer service. Knowledgeable staff (including both front line staff and policy makers) have a greater understanding of their municipal programs and can perform their responsibilities more effectively. There are a number of low-cost training options available. The Municipal Waste Association (MWA), Waste Diversion Ontario (WDO), the association of Municipalities of Ontario (AMO), Stewardship Ontario and the Solid Waste Association of North America (SWANA) are good sources for guides, workshops, or training resources on recycling or solid waste management.

Performance targets and goals should be communicated between BASWR and the municipal staff involved in waste management to ensure common end goals and that staff are kept current. At a minimum, the municipalities and BASWR should provide annual refresher training to program staff.

9.1.4 Assess Tools and Methods to Maximize Diversion

Waste recycling programs fail or succeed based on their ability to overcome public barriers to participation. Additional research on the appropriate tools and methods can help how best to maximize opportunities to divert blue box materials from the waste stream and reduce waste going to disposal. Possible topics may include:

- The types of waste diversion behaviours currently undertaken in each household;
- Perceived barriers to participation in waste diversion programs;
- Willingness to participate in waste recycling programs;
- How residents receive information or learn about local waste recycling programs;
- The tools residents need to increase their participation in recycling programs.

This information can be collected through internet, mail, and telephone surveys or focus groups. Methods and tools identified through the survey can be tested for performance using focus groups or through a pilot project.

9.2 FUTURE INITIATIVES

9.2.1 Expansion of Recyclable Blue Box Materials

For maximum diversion, a wide variety of recyclable materials is required. Deciding on which recyclable materials to include in the blue box program typically depend on the availability, collection costs, and market viability for the respective material. Markets are constantly changing; therefore, it is important for municipalities to stay abreast of material markets. In 2010, BASWR expanded blue box recyclables to include spiral boxboard and rigid plastic packaging. It is our understanding that the addition of these items has been well received by the public in further providing a convenient diversion opportunity for residents.

9.2.2 Optimization of Collection Operations

The purpose of optimizing collection operations is to collect more recyclables using fewer financial, capital and human resources. This requires critically assessing both collection and processing operations (as the two are closely linked) and making changes that reduce costs while at the same time increases capture of blue box materials. The relevant options for optimization vary according to the size, composition and location of municipalities, as well as their available processing options. Because processing and collection are directly linked, examination of one must be reviewed with the other.

9.2.3 Optimization of Processing Operations

Similar to the optimization of collection operations, the purpose of optimizing processing operations is to process more blue box materials for less cost. Processing operations may be optimized either through upgrading or maximizing the use of existing processing equipment, or by partnering or contracting with processing facilities in other communities. Based on the estimated growth and existing constraints (i.e., space) on BASWR's current facility, expansion options should be reviewed including the consideration of a new site location.

9.3 IMPLEMENTATION PLAN

As noted in Section 2.0, BASWR is a not-for-profit organization funded by its municipal members and as a result does not control funding allocation or municipal programs and policies. However, it is recognized that BASWR is a critical partner in the development of such programs and policies. Therefore, the implementation of the initiatives is intended to be in collaboration with the municipal members. Where recommendations have been made regarding municipal policy, these apply to those municipalities that have not yet implemented such policies, as it is recognized that some municipalities have already done so.

The following table provides the implementation steps of each diversion initiative.

Table 12: Recommended Diversion Options and Implementation Plan

Diversion Option		Steps
Priority Initiatives		
Municipal Member Policy Development	Mandatory Recycling By-Law	• Establish and implement by-law • Determine enforcement options, aids and penalties (e.g., clear bag system, withdrawal of disposal service) • Communicate by-law and enforcement measures to collection staff • Notify residents of by-law conditions
	Full User Pay	• Determine user pay fees • Notify public of user pay system
Promotion and Public Education Program		• Establish the level of financial resources available • Determine the type of media to be used (e.g., calendars, brochures, newsletters, newspaper, landfills, visitor centres, municipal website, etc.) • Develop and distribute communications materials
Training of Key Program Staff		• Keep program staff current with emerging technologies • Communicate end goals and purpose of programs • Cross training of staff that rotate positions • Continue annual refresher training
Assess Tools and Methods to Maximize Diversion		• Determine focal areas (e.g., urban or rural, small business, etc.) • Determine public engagement method (e.g., survey, open house, focus group, etc.) • Develop presentation and/or survey materials • Distribute public engagement materials and collect feedback • Analyze feedback then develop the diversion strategy
Future Initiatives		
Expansion of Recyclable Blue Box Materials		• Determine market viability • Determine processing requirements and funding opportunities • Determine collection option (e.g. depot or curbside collection) • Notify users of recyclables expansion and collection option
Optimization of Collection and Processing Operations		• Evaluate current system and identify improvement opportunities • Rate improvements opportunities with respect to performance targets and costs • Pursue the option(s) that provide the greatest return on investment • Plan and provide for emergencies, contingencies, and growth

Provided in the table below, are the implementation timelines and estimated costs for the Priority Initiatives. It is noted that the estimated costs provided are based on Municipal involvement. For example, public education and training of program staff are also the responsibility of the Municipalities. Particularly with educating the public, the municipality may be in better position to do so. The Future Initiatives are considered to be in the 'long term' (~5 years) and should be further evaluated with respect to implementation timelines and costs once the Priority Initiatives have been tested and/or established.

Table 13: Timelines and Estimated Costs of Priority Initiatives

Diversion Option	Implementation Timeline	Estimated Costs (1)	
		Implementation	Operation
Promotion and Public Education Program	Ongoing	$20,000	$15,000
Training of Key Program Staff	Ongoing	n/a	$20,000
Curbside Disposal Ban	Beginning of 2013	n/a	n/a
Mandatory Recycling By-law			
Assess Tools and Methods to Maximize Diversion	Ongoing	$50,000	$15,000
Total:		$70,000	$50,000

(1) Estimated costs are based on municipal involvement, and therefore, apply to both the municipality and BASWR efforts.

9.4 CONTINGENCIES

Even the best planning can be delayed by a variety of foreseen and unforeseen circumstances. Predicting and including contingencies can help to ensure that these risks are managed for minimum delay. The table below identifies contingencies for possible planning delays.

Table 14: Waste Recycling Strategy Contingencies

Risk	Contingency
Insufficient funding	• Explore and apply for other funding sources • Delay lower-priority initiatives • Raise/implement user fees
Public opposition to planned recycling initiatives	• Improve public communications • Engage community/stakeholders to discuss initiatives/recycling plan
Lack of available staff	• Prioritize department/municipal goals and initiatives • Hire summer student to help with planning (may be available funding)

10.0 MONITORING AND REPORTING

The monitoring and reporting of the BASWR's recycling program is considered a Blue Box program fundamental 'best practice' and will be a key component of this WRS. Once implementation of the strategy begins, the performance of the WRS will be monitored and measured against the baseline established for the current system. The approach for monitoring the recycling program is outlined in the following table.

Table 15: Recycling System Monitoring

Monitoring Topic	Monitoring Tool	Frequency
Total recyclables captured	Measuring of recyclables received at MRF	Each load
Total Recyclables Marketed	Monitoring of quantity of recyclables shipped to market	Annually
Municipal Member Waste Production	Monitor municipal member waste generation totals	Annually
Blue box diversion rates achieved	Formula: $\frac{\text{blue box materials}}{\text{total waste generated}} \times 100\%$	Annually
Program participation and customer satisfaction	Customer survey (e.g., mail-out, web, telephone); monitoring recycling habits; tracking calls/complaints received to the municipal office	Every 2 to 4 years
Opportunities for improvement	Customer survey (e.g., telephone); tracking calls/complaints received to the municipal office	On-going
Planning activities	Describe what initiatives have been fully or partially implemented, what will be done in the future	Annually
Review of Recycling Plan	A periodic review of the Recycling Plan to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement	Every 3 to 5 years

Monitoring of the waste recycling program involves participation from both the member municipalities and BASWR. Once the results are measured, it is recommended that they be shared between the municipal members and BASWR and be reported to the public.

Respectfully submitted,

GAMSBY AND MANNEROW LIMITED,

Per:

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M.D. Nelson, M.Sc., P.Eng., P.Geo.

WASTE RECYCLING STRATEGY
BRUCE AREA SOLID WASTE RECYCLING

APPENDIX A

WASTE RECYCLING OPTION SCORES

Description of Options/Best Practices (For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)*	Criteria (Score out of 5)						Total Criteria Score	Total Criteria Score (out of 100)
	Waste Diversion Potential	Proven Results	Market Accessibility	Economically Feasible	Accessibility to the Public	Ease of Implementation		
Promotion and Outreach								
Public Education and Promotion Program	2	4	n/a	5	4	5	20/25	80
Training of Key Program Staff	2	4	n/a	5	n/a	5	16/20	80
Policy Development								
Mandatory Recycling By-Law	5	5	n/a	5	5	2	22/25	88
Full User Pay	5	5	n/a	5	5	2	22/25	88
Collection								
Expansion of Recyclable Blue Box Materials	5	5	2	3	5	2	22/30	73
Optimization of Collection Operations	3	3	n/a	3	5	2	16/25	64
Transfer and Processing								
Optimization of Processing Operations	3	4	n/a	3	n/a	3	13/20	65
Additional Research								
Assess Tools and Methods to Maximize Diversion	4	4	n/a	4	3	5	20/25	80

WASTE RECYCLING STRATEGY
BRUCE AREA SOLID WASTE RECYCLING

APPENDIX B

MUNICIPAL WASTE RECYCLING QUESTIONNAIRE

Municipal Waste Recycling Questionnaire

The Continuous Improvement Fund (CIF) has developed a Waste Recycling Strategy (WRS) guidebook that is designed for small and medium municipalities that focuses on blue box diversion. The purpose of the WRS guidebook is to help municipalities develop a WRS of their own that is in line with provincial expectations for waste recycling practices identified in the Best Practice section of the Waste Diversion Organization (WDO) municipal datacall. As an incentive for developing a WRS, the CIF will provide up to 75% of the funding for up to a maximum of $15,000. Developing a WRS can also increase (or maintain) the portion of their annual WDO funding. As a result, Bruce Area Solid Waste Recycling has chosen to participate in the program and has retained Gamsby and Mannerow Ltd. to aid in developing the WRS. A component in developing the WRS is stake-holder consultation, which in this case, includes feedback from the municipal members.

Please help BASWR in developing their WRS by taking a moment to fill out this questionnaire.

1.) Which municipality do you represent?

_____

2.) What are some of the barriers that you see to recycling in your municipality?

_____

_____

_____

_____

3.) Does your municipality have a user pay system (i.e., bag tags)?

( ) Yes ( ) No

If no, do you foresee implementing a user pay system in the future?

( ) Yes ( ) No

4.) What programs to educate and promote recycling are currently in place in your municipality?

_____

_____

_____

_____

5.) Does your municipality have any policies or incentives to promote recycling and discourage excessive waste generation?

( ) Yes ( ) No

If so, what are they?

_____

_____

_____

_____

6.) Do you see any opportunities for optimizing collection of recyclables and waste?

( ) Yes ( ) No

If so, what are they?

_____

_____

_____

_____

7.) Do you have any suggestions on how your municipality (and BASWR) can improve its diversion rate?

_____

_____

_____

_____

Thank you for taking the time to complete our questionnaire. Your feedback provides valuable information that will be used in developing the Waste Recycling Strategy.