

**Phase 2 of Rural Depot Project:
Best Practices of Rural Recycling Depot Programs**

**Application of Best Practices for Rural Recycling Depots in the Quinte Region:
What has been Implemented and What still Needs to be Done**

E & E Funded Project Number 45 (Phase II)



Stewardship
ONTARIO

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- Municipality of Tweed
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- Township of Faraday
- Township of Limerick
- Township of Wollaston

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The term 'rural recycling depot' used in this report, refers to any system that collects residential, blue box recycling material at a central collection point, within a collection unit (ex. roll-off container, sea bin, rolling cart etc.).

Some of the depot attendants interviewed in this report are also designated as waste site managers and provide direction to other depot attendants at the site.

Municipalities are responsible for the financing and operation of rural depots, including site maintenance and ensuring there is sufficient storage for recyclables.

Quinte Waste Solutions (QWS) is an organization responsible for all waste reduction programs for a group of municipalities that includes Belleville, Quinte West, Tyendinaga, Prince Edward County, Centre Hastings, Stirling/Rawdon, the Municipalities of Tweed, Madoc Township and Marmora & Lake. QWS is administered by the Centre & South Hastings Waste Services Board, which is made up of one member from each of the above municipalities.

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EXECUTIVE SUMMARY

The goal of the Rural Depot Project is to discover how to improve recycling capture rates at recycling depots in rural areas. The project is funded by Quinte Waste Solutions and the Effectiveness and Efficiency Fund (E&E fund), which is administered by Stewardship Ontario.

The Rural Depot Project consists of three phases. In the first phase, an evaluation of Ontario rural depot best practices was carried out by S.G.S. Lakefield Limited and summarized under separate cover, in the report entitled 'Evaluation of Best Practices of Rural Recycling Depot Programs'. Building upon phase one of the project, the second phase investigates to what extent these best practices can be applied to 17 recycling depots serviced by Quinte Waste Solutions and identifies other improvements unique to these sites. In-depth interviews and on-site visits were conducted with 19 waste site managers and depot attendants at 16 rural recycling depots in Hastings County and Prince Edward County. The on-site visits also provided the opportunity to observe site operations and customer behaviours during peak season. The study culminated in 33 recommendations. For ease of use, recommendations have been categorized under 10 main themes outlined below. Finally, four of these recommendations were pilot tested for their effectiveness and the results are included in this report.

Theme 1: Responsible Depot Attendant

One of the most important themes is the role of the depot attendant. This theme is also incorporated into the recommendation from the Phase 1 report, which states, "A responsible depot attendant is the best defense against contamination."¹ One of the most striking observations was the close rapport that the depot attendants had with customers. Considering the importance of the attendant's role, there should be a designated Waste Management Supervisor to support depot attendants and extra staffing provided during busy times. A mandatory recycling by-law should be in place to support their monitoring efforts.

Theme 2: Space to Accommodate the Increasing Volume of Recyclables

The Phase 1 Report recommends the compaction of materials in order to reduce the frequency of collection from the depot site.² None of the recycling depots visited have an on-site compactor. Compactors are already contained in the collection trucks for Quinte Waste Solutions. The report highlights a number of issues, which suggest that on-site compaction is not a viable option.

The majority of the depot attendants interviewed expressed a need for more containers to store the recyclables. Excess recyclables strewn across the depot can make the site appear disorganized and in some cases, the overflow of recyclables has been placed with the garbage or elsewhere. Some possible solutions include the use of sea bins and gaylords to provide additional storage capacity, preparing in advance for possible overflow problems and providing holding tanks at strategic locations.

Theme 3: The Wasp and Environmental Issues

Wasps were the most common nuisance observed while visiting the rural depots. When containers are not rinsed properly, wasps become a major problem. They may affect the level of compliance because people are less inclined to take the time to properly separate materials when surrounded by wasps. Also, the presence of wasps may deter people from coming to the depot

¹ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.6, Line 1.

² SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para. 7, Line 1.

on a regular basis. Every effort should be made to manage the wasp problem in encourage public use of the depot.

Theme 4: User Friendliness of Site

A well maintained and user friendly site is an important feature of a recycling depot. The depot should be organized to make it convenient for the public to use. This theme is consistent with the Phase 1 report which recommends ensuring that “the depot site is well maintained to reduce contamination and to increase participation from the public”.³ It was observed that most of the sites could be made more ‘user friendly’ if given resources or support. Lower maintenance was due to factors such as lack of staff, lack of initiative from attendants who think it is not an important part of their role, lack of time, and problems with raccoons and bears getting into the garbage and recycling bins.

Some suggestions to improve the depot’s appearance and user friendliness include ensuring the depot is located in a sheltered area, managing traffic flow, providing convenient hours of operation and depot locations, using effective and uniform recycling procedures, and using effective labels and signage.

Theme 5: A Safe and Healthy Environment

Every effort should be made to help provide for a safe and healthy environment, such as implementing policies and posting signs prohibiting the idling of cars and smoking on-site. Non-smoking policies were not consistently enforced throughout all of the depots and depot attendants and members of the public were observed smoking at some of the sites. While the Smoke-Free Ontario Act bans smoking only in workplaces covered by a roof, the Municipal Act gives municipalities the right to prohibit smoking in public places.⁴ A smoke-free by-law should be enforced to ensure a healthy environment for everyone.

At the same time, an anti-idling policy should be implemented at all recycling depots. Attendants from two of the depots identified the exhaust from cars idling as a major problem. All of the sites can get extremely busy with cars lined up as people wait to enter the depot. Customers were observed letting their cars idle as they waited in line or as they jumped out to empty their recyclables. People did not idle their cars as much at sites where parking was provided.

Theme 6: Integrated Promotional Approach

The Phase 1 report recommends promoting the recycling depot in high traffic areas such as grocery stores, convenience stores etc.⁵ Currently, this best practice is not being well implemented. Generally, various staff members have each participated in isolated promotional efforts over time. A more integrated promotional approach is required, one that includes designating an employee to oversee the promotions, increasing awareness by advertising in high traffic venues, and supporting the attendant’s role in promotion.

Furthermore, it is recommended that each municipality and township assign an employee the responsibility of overseeing a comprehensive promotional and outreach plan. Quinte Waste Solutions’ web site should also be maintained and updated on a regular basis with relevant recycling depot information.

³ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 32, Para.3, Line 1.

⁴ *Municipal Act*, 2001 (c.25, s.115, ss.1)

⁵ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.3, Line 1.

Theme 7: Training and Support for Depot Attendants

Depot attendants play a key role in encouraging recycling, so it is crucial that they receive the necessary training. The Phase 1 report states that, “An attendant who promotes the program and encourages proper material separation contributes to the program’s success and increases its perceived and actual effectiveness”.⁶ All the attendants interviewed stated they did not receive any formal training and ‘learned on the job’. Most of the attendants expressed a desire to learn more about the recycling program and would like to receive proper training and support on such issues as conflict resolution, identifying recyclables, lifecycle of recyclables, by-laws and regulations, and first aid. To augment the training, depot attendants should be provided with further support systems including education manuals, information exchange opportunities, and communication devices.

Theme 8: Customer Education

Customer education is critical to the successful operations of a recycling depot. An informed and satisfied customer will result in higher recycling rates and lower contamination rates. The depot attendants identified several areas of customer education that need to be addressed, including proper rinsing and separation of recyclables, establishing uniform recycling procedures, developing special communications about the lifecycle of recyclables, and ensuring adequate communications about program changes.

Theme 9: Promoting Greater Reuse

Promoting the concept of reuse should be encouraged by educating the public and providing reuse centres at every depot. The recycling depot for the Township of Wollaston has a designated section for reusable items and serves as a leading example with its organized and ‘user friendly’ layout. Most of these items are taken by the public for reuse. According to the waste site manager, the reuse centre dramatically cuts down on reusable items going to landfill.

Theme 10: Waste Diversion Policies and Regulations

Waste diversion policies and regulations underpin the success of any recycling program. This includes financial incentives and mandatory recycling by-laws. The Phase 1 Report emphasizes that, “diversion policies such as mandatory recycling or user pay systems directly impact recycling depot program capture rates”.⁷ None of the municipalities serviced by the depots have mandatory recycling by-laws. There must be adequate financial incentives and a supporting mandatory recycling by-law, in order to encourage recycling.

The implementation of these recommendations should contribute to improving recycling at the rural recycling depots throughout the Quinte Waste Solution (QWS) service area and are also applicable to the rest of Ontario communities.

⁶ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.6, Line 2.

⁷ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 32, Para.4, Line 1.

1. Purpose and Summary of the of Rural Depot Project

The average Blue Box material capture rate for Quinte Waste Solutions' rural depot system is considerably lower than the average capture rate for its residential curbside recycling program. For example, the average capture rate for residential curbside recycling in the City of Belleville for 2007 was 227 kg/hh/year. In comparison to two rural depots serviced by QWS, this is almost three times the average recycling capture rate for one rural depot (80kg/hh/year) and five times the average recycling capture rate for the other rural depot (44kg/hh/year), for 2007. This is not an anomaly for QWS, but rather it is characteristic of rural recycling depots that underperform compared to curbside recycling on a province-wide basis. However, the cost to provide curbside recycling services in rural municipalities is often prohibitive due to low population densities and high seasonal population fluctuations.

In late 2004, Quinte Waste Solutions (QWS) launched its **Rural Depot Project** to identify how to improve recycling at rural recycling depots within its service area.⁸ The project was divided into two distinct phases with the first phase focusing on rural recycling depot best practices throughout Ontario and the second phase focusing on best practice assessment and opportunities within QWS' recycling depot system. Both phases were partially funded by the Effectiveness and Efficiency Fund (E&E fund) administered by Stewardship Ontario and also supported by Quinte Waste Solutions, which is a non-profit organization responsible for all waste reduction programs for member municipalities in the Hastings and Prince Edward counties.⁹

The purpose of the second phase of the Rural Depot Project was to research how these best practices could be applied to the rural recycling depots that utilize the support and collection services of Quinte Waste Solutions. This involved pinpointing the best practices that have been implemented from phase one and identifying what still needs to be done. The research results contributed to the formulation of 33 recommendations, which were made to improve the performance at recycling depots. Four of these recommendations were pilot tested for their effectiveness.

The results of the data and findings from the second phase will be shared with all relevant stakeholders. This is intended to serve as a catalyst for the implementation of the recommendations being proposed.

1.1 Phase 1 Summary of Findings

Phase 1 of Rural Depot Project: Evaluation of Best Practices of Rural Recycling Depot Programs

In September of 2005, S.G.S. Lakefield Research Limited completed Phase 1 of the Rural Depot Project by publishing a report called, "Evaluation of Best Practices of Rural Recycling Depot Programs". The study explored recycling depot programs in Ontario that experienced high

⁸ For this project, the term 'rural recycling depot' refers to any system that collects residential, blue box recycling material at a central collection point, within a collection unit (ex. roll-off container, sea bin, rolling cart etc.).

⁹ QWS is administered by the Centre & South Hastings Waste Services Board, which is made up of one representative from each of the 9 member municipalities. QWS operates the Blue Box recycling program, Hazardous Waste Collection programs as well as programs to divert organic materials from landfill. It also offers contract recycling services for other municipalities in the Quinte area.

participation and capture rates in order to identify the key elements that characterize a successful program.

The study focused only on rural recycling depot systems in municipalities which did not provide supporting curbside Blue Box collection services. Throughout the province, there are 48 rural recycling depot programs in this category. Among these, 19 were determined to be achieving higher capture rates than the provincial average (79 kg/hh/yr) for all 48 rural recycling depot programs as identified in the 2003 WDO Datacall. Quinte's program falls in the average performance range at 70.5 kg/hh/yr. In January 2005, a questionnaire was faxed to the targeted 19 municipalities as well as other better performing programs, asking about municipal attributes, facilities and operations, attendant duties, collection and infrastructure, and promotion and education. The surveys results were evaluated and summarized in a series of rural recycling program best practice recommendations intended for municipal depot program operators looking to maximize the efficiency and effectiveness of their system.

Best Practice Recommendations from the Phase 1 Report:

1. Increase the capture rate of existing Blue Box material by promoting the depot program in high traffic areas (e.g. waste disposal site, grocery store, convenience stores, seasonal bait shops, hardware stores, libraries, schools, banks, post offices, etc.).
2. Municipalities that rely on the same contractor to provide collection and processing services should require costs to be itemized according to lift fees, hauling fees, and processing fees. Such cost itemization allows municipalities to review specific costs associated with the program and, hence, to consider changes to improve efficiency.
3. A responsible depot attendant is the best defense against material contamination. An attendant who promotes the program and encourages proper material separation contributes to the program's success and increases its perceived and actual effectiveness. This in turn, results in higher community participation and overall capture rate. The depot attendant also supports mandatory recycling by-laws and/or user pay programs as the attendant can regulate and monitor inbound material.
4. Compacting and co-mingling material reduces the frequency of collection from the depot site and increases the potential for a municipality to haul the material a greater distance at a lower cost. This in turn increases the range of processing facility alternatives available to the municipality.¹⁰ It is important, however, to ensure that the processing MRF is equipped with the necessary infrastructure to handle potential changes in material preparation.
5. One cost-effective compaction alternative municipalities might consider is to retrofit enclosed containers with an on-site generator to power compaction equipment, where access to hydro is not available.
6. Consider leasing or renting collection containers if initial purchase of capital equipment is cost-prohibitive. Municipal programs that currently rent roll-off containers have the convenience of not incurring any maintenance cost and have low monthly payments (\$100 to \$200 per month, depending on length of the contract period).

¹⁰ Indeed, depot programs located in areas where there are many hauling and processing contractor options can get bids from several contractors which will reduce the risk of inflated costs since the contractors want to remain competitive.

7. Ensure that the depot site is well maintained to reduce contamination and to increase public participation.
8. Diversion policies such as mandatory recycling or user pay systems directly impact recycling depot capture rates. Capture rates can be further enhanced by implementing community programs that support the use of the recycling depot site.

1.2 Phase 2: Scope of Study and Methodology

This report is known as the 'Phase 2 Rural Depot Report' and includes 33 recommendations aimed at improving operations at QWS' rural recycling depots in an effort to increase recycling rates. Four of these recommendations were piloted tested to determine their effectiveness and the results are also included in this report.

Phase 2 used a qualitative research approach featuring on-site visits and interviews with depot attendants to gain insight into Quinte's rural recycling depot program. It was the most appropriate approach because it enabled the researcher to gain an in-depth understanding of the activities and dynamics occurring at the depot sites. This insight is necessary in order to identify what best practices are being implemented and what improvements should be made.

In-depth interviews were conducted with depot attendants at fifteen rural recycling depots in Hastings County and Prince Edward County.¹¹ All of the interviews took place in August 2006 with the exception of one interview, which occurred in September. The questions covered a variety of relevant issues such as location, staff needs and training, storage capacity, promotion, customer education needs, site appearance, user friendliness, and organization and layout of the recycling depots. The interview questions were developed using the best practices recommended by the Phase 1 Report. Appendix 1 includes a list of interview questions. Appendix 2 outlines the approach used to assess different elements of the recycling program based on input from the depot attendants.

The depot attendants that participated in the in-depth interviews worked at recycling depots for the following municipalities and townships:

- Prince Edward County - 6 locations including: Sophiasburgh, Picton, South Marysburgh, Hallowell, Wellington, and Ameliasburgh;
- City of Quinte West;
- Municipality of Centre Hastings;
- Township of Marmora and Lake;
- Municipality of Tweed;
- Township of Stirling-Rawdon - 2 locations including Stirling and Springbrook;
- Township of Faraday;
- Township of Limerick;
- Township of Wollaston.

In addition, four of the Phase 1 recommendations were chosen to be pilot tested.

¹¹ Some of these depot attendants are also considered waste site managers and provide direction to other attendants at the site.

This report is divided into three separate parts:

- **Review of Phase 1 Best Practices Recommendations on QWS' Depot Programs -** This section reviews the extent to which the eight recommendations from the Phase 1 report apply to QWS' recycling depot programs.
- **On-Site Interview Results and Recommendations –** This section summarizes the 33 recommendations developed from the interviews and on-site visits including how to best apply the best practices at the local level, as well as identification of other improvements unique to the rural depots studied. These recommendations fall under 10 themes (see Table 1.1).

Table 1.1: Main Themes Addressed in this Report

1. Responsible Depot Attendant
2. Space to Accommodate the Increasing Volume of Recyclables
3. The Wasp and Environmental Issues
4. User Friendliness of Site
5. A Safe and Healthy Environment
6. Integrated Promotional Approach
7. Training and Support for Depot Attendants
8. Customer Education
9. Promoting Greater Reuse
10. Waste Diversion Policies and Regulations

- **Pilot Test Results –** This section summarizes the results of the four pilot tests. Further detail is provided in Appendix 3.

2. Review of Phase 1 Best Practices Recommendations on QWS' Depot Programs

This section reviews the extent to which the eight recommendations from the Phase 1 report apply to QWS' recycling depot programs. Table 2.1 summarizes the extent to which the eight Phase 1 report recommendations are practiced at QWS' depots.

Table 2.1: Relevance of Phase 1 Recommendations on QWS' Depot Program

Recommendation	Is it Done?	Comments
1. Promote depot program in high traffic areas	not to potential	Please refer to Theme 6 of the report and Pilot Test 3 (Poster Pilot Test in Section 4.3). All of the recycling depots are located at waste disposal sites. This is considered a Best Practice as the recycling depot is being promoted each time people bring their garbage to the waste disposal site.
2. Require that costs are itemized	yes	Collection and processing costs are itemized. In addition, revenue, grants, special items, and fuel, are also itemized separately.
3. Provide support for responsible depot attendant	not to potential	Please refer to Theme 1 and Theme 7 of the report, and Pilot Test 1 (Extra Staff Pilot Test in Section 4.1) and Pilot Test 4 (Education Manual Pilot Test in Section 4.4).
4. Promote co-mingling and on-site compaction	yes no	Please refer to Appendix 4 on the issues associated with on-site compaction. The collection truck has a compactor, which compacts rigid plastic (not glass) and fibres.
5. Evaluate cost effectiveness of providing an on-site generator to power compaction equipment	no	This is considered irrelevant if on-site compaction is not feasible. Please refer to Appendix 4 on the issues associated with compaction.
6. Consider leasing or renting collection containers	no	Leasing or renting containers is not commonly done but there are a few exceptions. A couple of municipalities use roll-off containers owned by contractors, and are charged on a per use/dump basis.
7. Ensure that the site is well maintained	not to potential	Sites could be made more 'user friendly' if given resources or support. Please refer to Theme 4 and Pilot Test 1 (Extra Staff Pilot Test in Section 4.1).
8. Consider implementing user fees and mandatory recycling by-laws	all but two no	All but two sites have full user pay programs for garbage. One of these two sites only charges a user fee if garbage contains recyclables. Please refer to Theme 10.

3. On-Site Interview Results and Recommendations

This section summarizes the 33 recommendations developed from the interviews and on-site visits. For a quick reference list of these recommendations without explanations, please refer to Appendix 5.

3.1 Summary of Recommendations

3.1.1 Theme 1: Responsible Depot Attendant

Based on the interview results, one of the most important themes is the role of the depot attendant. This theme is also incorporated into one of the recommendations from the Phase 1 report, which states, "A responsible depot attendant is the best defense against contamination."¹² One of the most striking observations was the close rapport that the depot attendants had with customers. This relationship was found to encourage public participation and higher compliance.

- **Designate a Waste Management Supervisor responsible for supporting the depot attendants.**

The Waste Management Supervisor should visit the sites on a regular basis (weekly/monthly) and provide support to the depot attendants. Prince Edward County implemented this management system which has worked very well (see sidebar). The benefits of this arrangement were immediately apparent during the site observations. These benefits include:

- the increased sharing of information from one site to another via a common contact person;
- any questions or issues that arise with the depot attendants can be addressed on a regular basis, such as the need for more recycling program literature for the public;
- the supervisor can inform the attendants of any relevant regulations and program changes, and explain the reasoning behind them in order to prepare the attendant to handle questions from the public; and
- the supervisor can provide education and training opportunities.

During the site visits, many attendants expressed their desire to have more contact with their supervisors and more effective communications. Most supervisors are not given the time for site visits. This would help address some of the communication challenges encountered by depot attendants and their isolation concerns. For example, one of the depot

Prince Edward County's Waste Management Supervisor

Linda Ryan is the Waste Management Supervisor for the County of Prince Edward. Her main responsibility is waste management including garbage and recycling collection, responding to calls from the public, managing the depot attendants, and reviewing contracts.

Linda has about eight days allotted per month to devote time for on-site visits at the waste sites during operating hours, to help attendants with questions/concerns and to observe daily operations. She provides all attendants with Health & Safety supplies and on-site training. Regular staff meetings ensure everyone is up to date on new and changing site activities.

¹² SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.6, Line 1.

attendants said that nobody visits him on a regular basis and he does not have a main contact that he can reach immediately for emergency situations.

Currently, the supervision of depot attendants is the responsibility of the municipality. The role of QWS is to provide them with information and promotional support on a requested basis. Municipalities with only one or two rural depots may not be able to afford to hire a full time waste site supervisor. One option is to hire a supervisor for several rural depots, sharing the costs with other municipalities. Another solution might be for local municipalities to relinquish the responsibility for recycling depots to QWS. This set-up would be more efficient as there would be one (QWS) supervisor managing depot staff from multiple municipalities.

- **An extra staff should be provided for high traffic waste sites.**

Waste management has become an increasingly complex job, especially when waste site attendants are expected to monitor the recycling depot, landfill site, brush pile, and scrap pile (metal, fridges etc.). Consequently, most interviewed depot attendants stated they had 'somewhat enough time' to monitor public participation at the recycling depot and encourage proper material separation. Please refer to Appendix 2 for the rubric assessment chart completed by the attendants – the last section of the third rubric chart addresses proper material separation. Lack of time and no supporting mandatory by-law, were issues preventing most attendants from encouraging proper material separation with a high degree of effectiveness. Some attendants expressed a need for educational materials focusing on relevant waste and recycling regulations that could help support their efforts.

Over half (6) of the 11 waste sites observed, which contained both a landfill and recycling depot, were deemed to need extra support. Three of these six sites had only one attendant and the remaining three sites had two attendants. At the sites with one attendant, there simply is not enough time for these depot attendants to monitor people's activities to ensure that recycling is being properly undertaken. Even when there were two depot attendants designated at a site, their other responsibilities did not allow them to monitor the recycling activities 100% of the time. If cost is an issue, an extra staff member could be hired during the peak times during the day.

The impact of adding an extra staff person was pilot tested at one of the waste sites which was identified as needing extra help (refer to section 4.1 for an explanation of the pilot test and results). The recycling tonnage collected was analyzed for an eight month period after the extra staff person was hired, and compared to the recycling tonnage collected during the same months of the previous year. The results showed that recycling tonnage increased by 8% compared to the same time period in the previous year and the monitoring activities at the recycling depot also increased.

- **An extra staff should be provided to accommodate the influx of visitors during peak season.**

There is a significant increase in the number of customers using the rural recycling depots during the summer. This was observed first-hand during the site visits, with attendants scrambling to monitor activities, collect user fees, and help customers. One of the attendants mentioned that he never gets a chance to be at the recycling depot during the summer because he is kept busy at the entrance collecting user fees. Attendants at seven of the sixteen sites expressed the need for extra staff during peak season. Summer students could be hired by partnering with environmental programs at colleges and universities and pursuing government grants.

3.1.2 Theme 2: Space to Accommodate the Increasing Volume of Recyclables

The Phase 1 report recommends that “Compacting and co-mingling material reduces the frequency of collection from the depot site and increases the potential for a municipality to haul a greater distance at a lower cost. This in turn increases the range of processing facility alternatives available to the municipality”.¹³ None of QWS’ recycling depots have an on-site compactor but the collection trucks contain compactors. On site compaction is not as easy as it seems due to a number of issues including safety, availability of space, access to electric power, bin design, and costs. Refer to Appendix 4 for an explanation of these issues.

A theme that continually surfaced during the site visits was the need for more containers to store the overflow of recyclables. Depot attendants at twelve of the sixteen sites reported that they need more containers. Out of these twelve sites, depot attendants at five sites said they needed extra containers for peak season only. From 2002 to 2006, the weight of recyclables collected by Quinte Waste Solutions increased by approximately 25%. If the rural depot cannot handle the volume of recyclables, bags start to accumulate and the excess recyclables in the containers spill onto the depot grounds. This makes the site appear messy and disorganized. In some cases, the overflowing recyclables have been placed in the garbage because of this lack of space.

- **Investigate the use of sea bins to provide additional storage capacity.**

Sea Bins offer a more effective use of space than individual ‘95 Gallon’ carts and are less labour intensive than the ‘95 Gallon’ carts for several reasons:

- It takes more time for the QWS curbside collection truck to empty recyclables from the ‘95 Gallon’ carts than from the sea bins. Emptying the ‘95 Gallon’ carts is a time consuming process as it takes a minimum of 1 to 1.5 hours for drivers to unload the recyclables. Sea bins were found to significantly cut down on labour time.
- There were problems with the handles of the ‘95 Gallon’ carts breaking when the truck would lift them up to empty.

The attendants at sites with sea bins (see Photo 1) identified numerous advantages over ‘95 Gallon’ carts including:

- they are very useful and convenient to manage;
- they are more cost effective than ‘95 Gallon’ carts (refer to Appendix 6 for a cost comparison between sea bins and ‘95 Gallon’ carts);
- they can accommodate a higher volume of recyclables and use less space;
- they do not break to the same extent as ‘95 Gallon’ carts; and
- wasps appear to pose less of a problem.

¹³ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para. 7.



Photo 1: A typical Sea Bin at the Township of Marmora and Lake Recycling Depot

- **Prepare in advance for overflow and shortage of containers.**

Depot staff provided the following suggestions in regards to the problems associated with overflow and shortages of containers:

- Do not place recyclables in the garbage under any circumstances;
- Anticipate when you will receive an overflow of recyclables and call in advance to inform the relevant municipal contact of when you expect to receive an overflow of recyclables;
- Be prepared for an overflow of recyclables by budgeting for the purchase of more containers;
- Set aside recyclables dropped off in clear bags in order to prevent the containers from filling up too fast;
- Store excess recyclables in plastic bags but ensure that they are sorted to one category per bag and only clear bags are permitted.

Examples of Attendants Addressing the Capacity and Overflow Problem

Site 1: Every week, the depot attendants have to place the overflow of recyclables into bags. Since the drivers can only handle the carts, the depot attendants empty the plastic bags of overflow recyclables into the carts that have been already emptied by the truck drivers so they can be collected again. Last year, the drivers sometimes changed the order of their route so they could ensure there was space to pick up all of the site's recyclables.

Site 2: Although the waste site manager needed about 10 more carts for the summer, there was insufficient room to store them during the winter. The depot attendants have developed an effective cart rotation system to accommodate the storage limitations. When a cart in the recycling depot becomes full, it is moved to the row of 'full carts' in the storage room. It is then replaced by a cart taken from a row of 'empty carts' in the storage room. By the end of the week, all of the carts in the storage room are full.

Site 3: One depot attendant has developed a system to extend the capacity of the carts. If people bring recyclables in bags, he puts them on the ground so the carts will not fill up so fast.

- **A 'holding tank' should be provided to accommodate the overflow of recyclables.**

A holding tank for excess recyclables located in strategic locations offers the following advantages:

- Some truck drivers traveling to the farthest parts of the service area may fill one section of their truck while the other section is still partially full. It does not make sense from a financial standpoint to travel back to the MRF with a partially full truck. The extra recyclables could be stored in a holding tank until there is enough for a full truckload.
- A holding tank is useful for storing any overflow of recyclables, especially during peak season. For example, one of the depot attendants mentioned the truck-drivers do not have room to pick up everything because the trucks are already full from completing the curbside collection in town.
- Holding tanks can be used to accommodate the overflow of recyclables from other municipalities. It would be helpful to have a holding container in a central location such as Centre Hastings which could accommodate any overflow of recyclables from the northern townships.

- **Extra containers or large gaylords should be provided to accommodate the high volume of glass and Styrofoam.**

Styrofoam can be bulky, take up unnecessary space in the containers, and can be difficult to place in the recycling truck. Large pieces of Styrofoam should be broken up as much as possible and piled in a separate place such as in gaylord containers (thick, sturdy cardboard boxes), clear plastic bags, etc. Some depots encountered problems with Styrofoam and glass taking up valuable space at the recycling depot. Consequently, some attendants resorted to disposing large pieces of Styrofoam in the landfill.

An Innovative Solution:

Depot attendants at the Faraday Township waste site have addressed the Styrofoam issue by educating the public to break up the Styrofoam, including employees from companies such as Home Hardware. When people bring in a lot of Styrofoam, the attendants ask them to break it down and place in a clear plastic bag. Larger pieces, such as those coming from TV packaging, are placed on top of the carts in the storage section without bags.

3.1.3 Theme 3: The Wasp and Environmental Issues

Wasps and flies were a problem at every site visited. They actually interfered with the recycling process because customers were cautious about recycling when wasps were around them. Some people had a tendency to rush through the recycling in order to get away from the wasps. This affects the level of compliance and may deter people from going to the recycling depot. Every effort should be made to manage the wasp problem in order to avoid these issues.

- **Implement a variety of actions to reduce wasps.**

The following observations were made and advice offered:

- ***Sea bins appeared to have significantly less wasps compared to the '95 Gallon' carts. They should be washed down each time they are emptied*** - One of the depot attendants mentioned that there are fewer wasps around sea bins because the opening is from the side. Wasps tended to hide underneath the sea bin rather than inside it. The '95 Gallon' carts, however, open from the top and wasps tended to congregate inside of the

container around the top. When sea bins are removed for pick-up, the attendants can easily spray the wasps or wasp hives nesting underneath.

- **'95 Gallon' carts should be washed on a rotating system in order to decrease the attraction of wasps** - Two of the waste site managers mentioned they flag dirty carts and clean them before using again. The depot attendants at the Centre Hastings recycling depot use a pressure washer to spray down their '95 Gallon' carts and large green bins for glass. The water is mixed with a small bit of chlorine. They had virtually no problem with wasps.
- **Keep the lids of the carts closed as much as possible** - Most of the sites keep the lids open on the recycling carts when in use. Keeping them shut would attract fewer wasps. Unfortunately, keeping the lids shut slows down the recycling process. One depot attendant said that people complain about having to open the lids, which takes extra time. Another depot attendant mentioned that the wasps would fly in your face when opening the lid.
- **Use several wasp traps in the depot area** - According to the Pest Control Canada web site, it is effective to set out wasp traps in the spring when the 'queen' wasps emerge. Trapping the 'queen wasps' during the thirty to forty-five day period in the spring has the potential to decrease the wasp population for the rest of the season. More traps may be required in the fall¹⁴.
- **Use rain-catcher containers to collect water at the depots with poor water access.** Rain-catcher containers (with a screened lid, a regular covering, and a tap that can be connected to a pressure washer) should be provided for sites that do not have access to water, so the carts can be washed down. For sites with access to water, using rain catchers is an effective cost saving and water conservation strategy. Please note the following:
 - The water should not be consumed or used for washing skin
 - A sign should be placed on the rain-catcher that states, "Not potable water. Do not drink or use for washing skin".
 - Keep rain-catcher in a place where the public will not be tempted to use it.

3.1.4 Theme 4: User Friendliness of Site

It is important for the recycling depot to have a well-maintained and organized layout that is convenient for the public to use. This theme is addressed in the Phase 1 report which recommends to, "Ensure the depot site is well maintained to reduce contamination and to increase participation from the public".¹⁵ Sites that are well maintained encourage people to make more of an effort to use it.

As part of the study, the sites were ranked on appearance ranging from Level 1 reflecting no maintenance to Level 5 reflecting exceptional maintenance. Please refer to Appendix 2 (second

¹⁴ Pest Control Canada. *Wasp and Hornet Control*. Date Accessed: January 2007

http://www.pestcontrolcanada.com/INSECTS/wasp_and_hornet_control.htm

¹⁵ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 32, Para.3, Line 1.

rubric assessment chart) for a description of each level. Most sites were ranked at a Level 3, meaning the site could be more 'user friendly' if given resources or support. Lower maintenance concerns were often due to factors such as lack of staff, lack of initiative from the attendant because they did not think it is an important part of their role, lack of time, and problems with animals getting into the garbage and recycling containers.

- **Ensure that the recycling depot is located in a sheltered area.**

Recycling depots located underneath a shelter had significantly fewer problems with wasps than depots located outdoors. Furthermore, the grounds tend to be neater because there were fewer fly-away recyclables. The layout tended to be less cluttered because carts that were not in use at that moment could be stored outside or in another section of the shelter away from the recycling depot section.

- **The site should be well-maintained and have a neat layout convenient for the user.**

People tend to participate more in recycling when a site is well maintained. Monitoring is an important part of site maintenance. Many attendants mentioned that they have to constantly monitor customer activities and ensure that the bins/carts contain proper contents. If a customer makes a mistake, some of the other customers will tend to follow. Benches or tables should be provided for customers to place their blue box or bins while they are separating their recyclables.

The depot attendant should be responsible for ensuring the grounds are kept clean and free of litter. Some attendants simply did not have time to clean the grounds. In that case, they should inform the municipal office that they need staff support to ensure the grounds are cleaned regularly. In other cases, the depot attendants had different interpretations of their roles and responsibilities. The various levels of maintenance at these sites reflected the differences in this interpretation.

Photos 2 and 3 show well maintained recycling depots.



Photos 2 and 3: A well maintained site at the Township of Faraday Recycling Depot and benches at the Municipality of Tweed Recycling Depot

- **Create an organized parking section to help manage traffic flow and discourage the idling of cars.**

Recycling depots can get very crowded resulting in a line-up of cars. Creating an organized parking section could help alleviate 'bottlenecks' as well as discourage cars from idling, while waiting in line to use the depot. Discouraging cars to park directly in front of the recycling carts/bins by organizing a parking section to the side will enable more people to use the depot at once. This will speed up the recycling process and reduce the idling of cars.

- **Convenient waste depot hours will encourage higher participation in the recycling program.**

Each municipality and township should re-evaluate their recycling depot's hours of operation to determine if the public's diverse range of work schedules is being taken into account. Providing convenient hours of operation is a key element for program participation because inconvenient hours of operation usually result in lower participation rates.¹⁶

- **A convenient depot location will encourage higher participation in the recycling program.**

Each municipality and township should evaluate its current depot location to determine if it should be changed and if there should be an additional location provided. Not all waste depots are located in central proximity to the region being served. For example, the Quinte West depot site is an ideal location for Trenton but not for Belleville. Participation rates may not reach their full potential if the depot is not located in a convenient location. Additional supporting depots should be considered if the existing depot cannot adequately service all people in the area.

- **The recycling procedure used for customers (including promotion, education, and labeling) should be made as uniform as possible at all rural recycling depots in the service area.**

Not all rural depots had the same recycling procedures. Although most of the sites used labels provided by QWS, some sites used their own. In some cases, two labels would be placed on the containers; each label identifying different recyclable items permitted in the recycling cart. In other cases, some sites would collect plastic garbage bags in a separate container while other sites would mix it with the newspapers and other fibrous contents. Some sites had a special bin for Styrofoam, while other sites collected the material with other non-fibrous (rigid plastic) recyclables. These inconsistencies are confusing to the public.

An innovative thought...

One of the waste site managers recommended that the process be made consistent as possible throughout Ontario. During the summer, a significant number of customers are cottagers or visitors from another area. These people have a hard time recycling because the process varies from their residential community.

¹⁶ McKenzie-Mohr et al. *Fostering Sustainable Behaviour – An Introduction to Community-Based Social Marketing*. Gabriola Island, British Columbia: New Society Publishers, 1999. Page 118.

- **Display overhead signs above each recycling bin.**

Displaying overhead signs above each recycling bin encourages easier and more effective use of the bins and provides more flexibility with how the carts are used. The recycling depots that used overhead signs appeared better organized and neater in appearance and customers needed very little guidance in using the recycling carts.

Two types of layouts were pilot tested against the traditional style layout (refer to Section 4.2 - Pilot Test 2 for the results). The traditional style consisted of rows of individually labeled '95 Gallon' carts, with no dividers separating each category of carts. Both alternative layouts tested used a divider to separate each category of recyclables and one overhead sign for each category of recyclables. The first alternative layout used 'text only' signs and the second alternative layout used 'picture/graphic' signs. During the pilot, the traditional layout experienced the most contamination in comparison to the alternative layouts. The alternative layout using the picture/graphic signs had significantly less contamination compared to the alternative layout with the 'text only' signs.

Case Example:

Overhead signs were used at the recycling depots in Faraday Township and Centre Hastings. The signs were effective because customers needed minimal guidance if any. Even though Faraday Township required the most recyclables separation, customers did not have any problems separating the recyclables. There were overhead signs for each category and arrows pointing to the relevant carts. Customers tended to make fewer mistakes with this arrangement. The full carts and empty ones not in use were kept in a separate room, so the customer was not overwhelmed by a clutter of carts. Since the carts are not labeled, they can be used to collect any category of items. This flexibility is helpful because the number of carts needed for each category may fluctuate each week. Also, if items for a category changes, it is less time consuming to change one overhead sign rather than re-label all of the carts. This translates into more time for important duties such as monitoring the recycling depot and landfill activities.

- **Ensure the labels are clear and bright.**

Once the labels or signs start to fade, the attendants should arrange for replacements. It was observed that many sites needed replacement labels.

- **Use a numbering system on the metal bins to make it easier for the depot attendant to direct customers to the appropriate metal bin.**

Metal bins should be labeled numerically, in order to make it easier for the depot attendant to direct the customer to the appropriate bin. Customers often need some guidance when using the metal bins due to their large size and similarity in appearance. In addition, they are tall so the customer cannot easily check if the bin is full or confirm the contents of it.

Often the same type of bin is used for the collection of garbage, glass, and corrugated cardboard, which causes confusion among customers when the depot attendant directs the customer by pointing to a bin. Using a numbering system will cut down on the time spent by the depot attendant having to re-direct people and it should help reduce contamination. Magnetic signs could also be kept in stock and placed on full bins in order to communicate to customers that they can be no longer used.

An innovative thought...

The depot attendants from the Ameliasburg and Picton sites both suggested placing a visible label on the underside of the lid. Currently, the labels are placed on the top of the lid, so people cannot see them when the lid is open.

- **Labels or signs above bins should contain pictures to provide additional information to the customer.**

Pictographs provide additional information to the customer. The depot attendant from the Ameliasburg depot emphasized the importance of using pictures because they are more eye-catching and easier to understand than just text. The results of Pilot Test 2 (refer to Section 4.2) clearly demonstrate that the use of pictures is significantly more effective than using text only and results in lower contamination rates.

- **Place clear signs at the entrance of the waste site informing customers of recycling and disposal procedures, material bans and other important information.**

Placing signs at the entrance of the waste site and recycling depot can help to reduce congestion, confusion and improper activity at the depot. For example, clear signs at the entrance can stipulate key points such as ‘No hazardous Waste Permitted’ and can be used to instruct people to drop off their recyclables first. This makes it easier for depot attendants to check the garbage for recyclables before it reaches the landfill, and removes the opportunity for the public to dump recyclables in the landfill. Every effort taken to inform customers of the key issues upfront will translate into less time needed for attendants to direct customers on these matters and more customer satisfaction.

3.1.5 Theme 5: A Safe and Healthy Environment

Every effort should be made to help provide for a safe and healthy environment, such as implementing policies and posting signs prohibiting the idling of cars and smoking on-site. Implementing such policies is a precautionary step towards protecting the public and employees from the deleterious health effects of air pollution.

The Municipal Act provides the municipality with the power to regulate matters of health and safety, “A municipality may regulate matters not specifically provided for by this Act or any other Act for purposes related to the health, safety, and well-being of the inhabitants of the municipality”.¹⁷ Furthermore, these actions are also consistent with the Occupational Health and Safety Act which states that the employer shall “take every precaution reasonable in the circumstances for the protection of the worker”.¹⁸

- **All rural recycling depots should have highly visible ‘No Smoking’ signs and policies.**

Most depot attendants indicated that smoking is allowed anywhere except in an enclosed area with a roof and; consequently, both customers and depot attendants were found smoking around the outdoor recycling depots. While the Smoke-Free Ontario Act bans smoking only in workplaces covered by a roof, the Municipal Act gives municipalities the right to prohibit smoking in public places.¹⁹ The Municipal Act states, “A municipality may prohibit or regulate the smoking of tobacco in public places and workplaces”.²⁰ Furthermore, the Ontario Fire Code states, “Smoking

¹⁷ *Municipal Act, 2001* (c.25, s.130)

¹⁸ *Occupational Health and Safety Act*. (Part 3, s.25, ss. 2 h)

¹⁹ *Municipal Act, 2001* (c.25, s.115, ss.1)

²⁰ *The Municipal Act, 2001* (c.25, s.115, ss.1)

shall be prohibited in salvage yards, except as permitted in Subsection 2.4.3.”²¹ Recyclables are considered salvageable materials and, therefore, subject to the Ontario Fire Code.

A smoke-free by-law should be enforced to ensure a healthy environment for everyone. For example, the depots can get very crowded with both adults and children who would be exposed to second-hand smoke, if smoking were permitted. Also, smoking presents a potential fire hazard because the ashes may fall into the container and start a fire.

A barrier to the implementation of a non-smoking policy is the possible resistance from the attendants who have always been allowed to smoke at the site. This fact must be taken into consideration when introducing this policy. Support from the depot attendants is crucial when implementing such changes. For this reason, attendants should be informed of upcoming changes in advance and provided with support, so they will have time to prepare for the changes and educate and deal with the public.

- **Develop an anti-idling policy and post anti-idling signs to discourage the idling of cars.**

An anti-idling policy should be developed and highly visible anti-idling signs should be posted to discourage the idling of cars. Prohibiting the idling of cars will provide for a healthier and more pleasant environment for the public and depot attendants. Implementing an anti-idling policy is a step towards improving the quality of air at the recycling depot and contributes to Canada’s effort to cut down on greenhouse gas emissions. This change should ideally be supported by a municipal anti-idling by-law and an education campaign.

Attendants from two of the depots identified the exhaust from cars idling as a major problem. All of the sites can get extremely busy with cars lined up as people wait to enter the depot. Customers were observed letting their cars idle as they waited in line or as they stepped out to empty their recyclables. People did not idle their cars as much at sites where parking was provided.

3.1.6 Theme 6: Integrated Promotional Approach

One of the Best Practices recommended in the Phase 1 Report was to “increase capture rate of existing Blue Box material by promoting the depot program in high traffic areas (e.g. waste disposal site, grocery store, convenience stores, seasonal bait shops, hardware stores, libraries, schools, banks, post offices etc.)”²² Currently, this best practice is not being well implemented.

- **There needs to be a more integrated promotional approach for the recycling depot which is supported by the municipality or township.**

An integrated promotional approach needs to be developed which includes designating an employee to oversee promotions and outreach, increasing awareness by advertising at high traffic venues, and supporting the depot attendant’s role in promotion.

²¹ *The Ontario Fire Code*, 2001 (Part 3, s.3.5, ss.3.5.1.9)

²² SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.3, Line 1.

The interviews revealed that, in general, the local municipalities were not tapping into the promotional opportunities to encourage increased recycling at the depots. Promotional work was generally done in isolated bits and pieces by various staff members. There is no designated employee responsible for overseeing a comprehensive promotional plan. Each municipality and township should assign a designated employee the responsibility of overseeing a comprehensive promotional plan.

Depot attendants were asked to assess their level of involvement (from 1 to 5 – see the third rubric assessment chart in Appendix 2 for a description of the ranking levels) in promoting the program. Most depot attendants responded (at a level 3) that they promote the program by thoroughly responding to questions/concerns and by providing further information; however, they were unable to offer a higher level of service, such as handing out promotional and educational literature, due to time constraints and lack of available literature.

Depot attendants need more training and education to help them achieve the highest level of promotional involvement. Also, some of the recycling depots lack a formal communication process between the depot attendants and municipal staff. This communication is vital for keeping depot attendants abreast of the relevant program developments.

- **Each municipality or township should have one person assigned the responsibility of overseeing a comprehensive outreach plan for the recycling depots.**

Each municipality and township needs an employee assigned the responsibility of ensuring that the rural recycling depot is promoted to its full potential; otherwise, the promotion of the recycling depot risks being neglected. This person should also serve as the communication link between the depot attendants and municipal staff. The comprehensive outreach plan would also include an educational component for the public and relevant staff.

- **The recycling depot program should be promoted in high traffic areas.**

One of the recommendations from the Phase 1 report was to promote the recycling depot in high traffic areas such as grocery stores, convenience stores etc.²³ Currently, the rural depots are not being well promoted using this approach.

The method of using posters in high traffic venues to increase the public's awareness of the rural recycling depot was pilot tested for its effectiveness in the village of Coe Hill (refer to Section 4.3 for the detailed results). Laminated paper signs were posted for a two week period and placed in high traffic venues including the post office, liquor store, grocery store, gas station, two restaurants, the public library, and the township office. The pilot test findings revealed that the posters had little to no effect in prompting people to recycle and the vast majority of people did not notice them, even when placed in what was considered high traffic areas.

The pilot study concluded that people are bombarded with information and advertising on a daily basis so they generally do not notice posters. If a municipality plans to use posters, they should invest the time and resources in producing an eye-catching poster with graphics, and carefully selecting high traffic venues by examining the consumer patterns of the public.

²³ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.3, Line 1.

- **Depot attendants should ensure they always have an adequate supply of recycling information sheets on-hand for customers.**

Almost every recycling depot visited lacked adequate information literature or the supply of materials needed replenishing. It is always important for depot attendants to keep public information materials on-hand for customers who need further information and to help the attendants stay better informed. This will help free up time for attendants to monitor activities instead of constantly answering random recycling questions. It is always helpful for people to have program information they can review when they have a question or forget about a certain process. Depot attendants should be encouraged to call Quinte Waste Solutions to request more literature when the supply needs replenishing.

- **The Quinte Waste Solutions' web site should be maintained and updated on a regular basis with relevant recycling depot information.**

The web site for Quinte Waste Solutions should contain an entire listing of all rural depots with relevant information such as location, depot hours, contact information etc. A link to this web page should be provided on key web sites such as municipal, township, and tourism web sites. Currently, this information is not provided on the Quinte Waste Solutions' web site.

3.1.7 Theme 7: Training and Support for Depot Attendants

Providing ongoing training and support for depot attendants encourages them to assume greater responsibility over the management of the depot. The Phase 1 report recommends that “a responsible depot attendant is the best defense against contamination”.²⁴ Those depot attendants who were observed to assume greater responsibility for the management of the depot experienced higher recycling diversion rates compared to those depot attendants who were less involved (refer to Appendix 7 for a more detailed explanation).

- **Depot attendants must receive appropriate training related to their roles and responsibilities at the depot.**

Depot attendants play a key role in encouraging recycling. The Phase 1 report states that, “an attendant who promotes the program and encourages proper material separation contributes to the program's success and increases it's perceived and actual effectiveness”.²⁵ Considering the importance of their role, it is crucial that depot attendants receive the necessary training related to their roles and responsibilities at the depot.

None of the interviewed depot attendants stated that they had received any formal training on how to operate a recycling depot, rather their training involved learning on the job. Most of the attendants expressed a desire to learn more about the recycling program, including what can and cannot be recycled as well as the lifecycle of the recyclables.

²⁴ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para. 6, Line 1.

²⁵ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 31, Para.6, Line 2.

Based on the input gathered from the depot attendant interviews, training for permanent and temporary (floaters) depot attendants should address the following issues:

- **Identifying recyclables** - The marketplace is bombarded with an increasing number of products and packaging. Many depot attendants expressed their confusion in determining whether a material can be recycled in the current program. Attendants mentioned that they deal with an overwhelming number of “grey area recyclables” and need training on how to identify them and determine if they can be recycled.
- **Consistent understanding of the depot attendant role** - It was evident from the interviews that each depot attendant had a different view of their role. As a result, the maintenance of recycling depots varied from site to site. Attendants should receive training as to their roles, responsibilities and job expectations.
- **Lifecycle of recyclables** - Many of the attendants expressed an interest in learning about the full lifecycle of recyclables and indicated they found it motivational to know that their efforts are making a difference. Attendants also mentioned that this information is needed to help them answer questions from the public.
- **Contamination and overflow issues** - Depot attendants need training on how to effectively deal with contamination and overflow issues. Attendants want to better understand how contaminated containers impact the recycling process, so they can communicate it to the customers. Also, attendants need training on how to deal with overflow situations that best meet the needs and characteristics of the depot.
- **Conflict resolution training** - Depot attendants need training in effectively dealing with customer complaints, confrontations and uncomfortable situations; for example, how to handle a confrontation with a customer who says, “I already pay for my garbage so why should I separate my recyclables?”. This is more imperative for depot attendants who work alone and/or in isolated areas. A highly recommended course, offered by the Municipal Health and Safety Association, is called Violence in the Workplace Training.
- **First aid** – It is also crucial that all depot attendants receive First Aid training to enable them to respond to an injured or ill customer or co-worker.
- **Encouraging proper recycling behaviour** – Many depot attendants observed that customers rely on them extensively to help sort recyclables into appropriate bins rather than learning to do it independently. Armed with proper information and training, the depot attendants felt that they could increase the customers’ awareness of the need to sort and recycle the materials themselves and incorporate the activity into their every day behaviour.
- **By-Laws and regulations** - Attendants should be well-versed on the relevant by-laws and regulations in order to effectively deal with customer issues. This knowledge will provide attendants with the confidence to monitor customer activities and address people who are non-compliant. Also, municipal staff should work with depot attendants to ensure that non-smoking policies are properly implemented and that all staff are educated on relevant regulations such as the Ontario Fire Code.

- **Additional support systems should be provided.**

Based on the depot attendants' input, the following support should be provided:

- **An education manual** – As part of the project, an education manual was developed for the depot attendants based on a needs assessment. The manual contained important information related to proper operation of the depot including contamination and overflow issues, recyclable materials, relevant regulations and contact information (refer to Section 4.4 for results). Overall, the attendants were highly appreciative of the education manual and thought it would serve as a good reference booklet and as an excellent training tool for new employees.
- **Information exchange opportunities** - There must be a vehicle for sharing information such as a newsletter, networking session, and on-site visits to other recycling depots that serve as leading examples. The depot attendants expressed the importance of timely communication of program changes and having opportunities to share helpful tips and strategies with other depot attendants.
- **Communication devices** - All depot attendants should have communication devices that enable them to contact and be contacted in case of emergency.
- **Adequate amenities** – All rural depots should have adequate amenities for depot attendants and customers to use, such as fully operational washrooms.

- **Develop mandatory check-in procedures.**

There should be a process requiring depot attendants to report to a municipal staff member at the beginning and end of their shift to report any incidences or information that may be of use to the next shift and municipality. This is important because many depot attendants work alone and there is a risk that nobody would know if anything were to happen to them.

- **Develop effective fee collection and monitoring procedures.**

A number of measures should be considered to ensure effective user fee (i.e. bag tag) collection and monitoring activities at the depot. Some recommendations include:

- During peak times, there should be an extra staff person to help with the money collection to help free up time for monitoring activities;
- A fee collection system should be introduced to ensure effective collection of fees and reporting procedures.

An effective use fee collection approach

In Prince Edward County, depot attendants use a ticketing system to record transactions. Upon collection of a user fee, the attendant issues a ticket to the customer while retaining the ticket stub. The money is stored in a cash box and ticket number recorded. At the end of the day, the ticket numbers are reported to the county office clerk. The money and ticket stubs are brought to the county office on a regular basis.

3.1.8 Theme 8: Customer Education

Customer education is critical to the successful operations of a recycling depot. An informed and satisfied customer will result in higher recycling rates and lower contamination rates.

- **Respond to customer education needs.**

Interviews with depot attendants revealed the need to educate customers on how to properly use the recycling depot. Educating people to become competent in the recycling process will improve depot operations, increase recycling rates, and reduce program costs. Depot attendants suggested that customer education needs to emphasize the following:

- ***Properly rinsing out recyclable containers*** - Depot attendants were adamant about the need to educate customers about the need to rinse out containers before bringing them to the depot in order to reduce the problems associated with unwanted wasps, odors, and animals.
- ***Properly separating recyclables and reducing contamination*** - People need to recognize that improper separation of recyclables results in increased program costs due to contamination of the recycling stream which is paid for through their taxes. Special attention should be given to separating clear from coloured glass, and boxboard from cardboard.
- ***Differentiating between acceptable and non-acceptable materials*** - Customers need to be educated on the importance of bringing only acceptable materials to the recycling depot and using alternative means for managing unacceptable materials, such as hazardous waste (especially paint), and broken window and mirror glass.
- ***Providing uniform recycling procedures*** - People need guidance on the recycling process, especially newcomers, cottagers, and tourists. Many new customers say they find the recycling process confusing at the beginning because it varies from community to community.
- ***The lifecycle of recyclables*** - Customers need to be educated about the lifecycle of the recyclable and reassured that their efforts are making a difference.
- ***The proper management of plastic recyclables*** – Special attention needs to be given to plastic recyclables, which were found to experience the highest contamination rates at the depots and were considered the most frequently misplaced recyclable, especially plastic film. Appendix 8 describes a pilot test conducted at a site over a 9 week period to determine what type of items people were misplacing the most. Hard and soft plastic items accounted for over half of the total recycling errors. Plastic film proved to be the most problematic material which was often placed in the wrong recycling bin.
- ***Ensuring that customers are adequately informed about program changes*** – To prevent customer confusion and potential dissatisfaction, it is important to provide adequate and timely information about program changes. This would also help the depot attendants to enforce the changes and deal with frustrated customers who have not been properly informed about program changes. This is especially important when changes to fees and rates are involved.

Case Example:

At one depot, a new practice was introduced where the depot attendants had to charge \$2 for every bag going to landfill that contained any recyclables (residents previously incurred no charges). The intent was to encourage separation of recyclables. The problem was the absence of educational support to help educate the customers about the new fees. The depot attendants had to do the 'dirty work' of introducing the \$2 bag fee to people with 'mixed bags'. Some customers were not happy to learn of this unexpected change when they arrived at the depot. The depot attendants eventually gained public support but it was a challenging journey. During the interview, the head depot attendant motioned over to a man diligently separating his recyclables. He said that this man used to shout in resistance to recycling and storm away. It was evident that the man has accepted the change and is quite a competent recycler now.

3.1.9 Theme 9: Promoting Greater Reuse

This activity supports the ‘Reduce, Reuse, and then Recycle or Recover’ hierarchy of waste management as promoted in the Waste Diversion Act and advocated by the Association of Municipalities of Ontario, the Association of Municipal Recycling Coordinators, and the Ontario Ministry of the Environment.²⁶

- **Establish reuse areas at the depot.**

Waste sites should encourage the reuse of items by establishing a reuse section at each depot. The reusable items can be given away or sold for small price with the profit being invested back into the waste site. Providing a reusable section enhances the services of the waste site. This will help attract more customers to use the depot’s services, including recycling.

The site at the Township of Wollaston is the only depot in the QWS service area, with an organized, designated section for reusable items and serves as a leading example with its ‘user friendly’ layout (see Figures 4 and 5 below and Appendix 9 for further detail). According to the site manager at Wollaston, the reuse section has dramatically cut down on reusable items going to landfill. Another good example is the reuse depot arrangement at Wellington County (for more information, access the following web site: www.county.wellington.on.ca under the heading ‘Solid Waste Services’).



Figures 4 and 5: ‘Used Items’ Section at the Wollaston Rural Depot

²⁶ Waste Diversion Act, 2002 (c.6, s.1) & Association of Municipalities of Ontario and Association of Municipal Recycling Coordinators. *AMO/AMRC Discussion Paper on Strengthening Extended Producer Responsibilities in Ontario’s Blue Box*. Toronto and Guelph: AMO and AMRC, June 2007. Page 18, Figure 7. & Waste Management Task Force of the AMO and AMRC. *AMO’s Proposal for a Provincial Integrated Waste Strategy*. Toronto: Association of Municipalities of Ontario and Association of Municipal Recycling Coordinators, December 2005. Page 4, Para. 2, Section 2.3; Page 5, Para. 3, Section 2.33 ‘Product Reuse’. & Ontario Ministry of the Environment. *Summary Report: Consultation Sessions on Achieving Ontario’s 60% Waste Diversion Goal: June 18 – July 13, 2004*. Queen’s Printer for Ontario, 2004. Page 28, Line 16 under ‘Other Actions’, and Page 16, Line 37, and Page 34, Line 6.

3.1.10 Theme 10: Waste Diversion Policies and Regulations

The last theme of recommendations addresses waste diversion policies and regulations. The Phase 1 Report draws attention to the fact that, “diversion policies such as mandatory recycling or user pay systems directly impact recycling depot program capture rates”.²⁷ Within the QWS service area, only two of the municipalities have not implemented a full user pay program. Most of the municipalities and townships with user pay programs only charge \$1 per garbage bag. There must be adequate financial incentives to encourage recycling as well as a supporting mandatory recycling by-law.

- **Implement uniform waste diversion policies.**

There should be a concerted effort among all member municipalities to set consistent waste diversion goals and policies including user pay and mandatory recycling by-laws. Currently, waste diversion policies vary from municipality to municipality. While most municipalities have a user pay program in place, the price of a bag varies. Furthermore, mandatory recycling by-laws have not been enacted by any of the regions served by the depots.

There should be concerted effort to standardize the user pay programs within the QWS service area and to ensure that all recycling programs are supported by a mandatory recycling by-law. These efforts will help to encourage further participation by residents in the recycling program and will help to empower depot attendants to monitor for compliance. Some depot attendants have expressed the challenges they face in confronting people who decline to recycle properly when it is not against the law. The lack of a mandatory recycling by-law is a significant barrier to enforcing proper material separation.

Case Example:

The Township of Algonquin Highlands adopted a mandatory recycling by-law June 1, 2004. The township has a service population of 1,800 that increases to 10,000 during peak season. There is no curbside collection and all waste materials are brought to one of the five landfills in the township. Recycling has increased in the township since the by-law took effect. The mandatory recycling by-law has been attributed to improved recycling rates.

²⁷ SGS Lakefield Research Limited. *Evaluation of Best Practices of Rural Recycling Depot Programs*. Lakefield: SGS Lakefield Research Limited, 2006. Page 32, Para.4, Line 1.

4. Pilot Test Results

Four of the recommendations outlined in the previous section were pilot tested in order to determine the impacts of their application. The intent was to discover if the recommendations yielded effective results when put into practice. The pilot testing occurred over an eight month period, from October 2006 to May 2007. A summary of the pilot tests is provided below with further description provided in Appendix 3.

4.1 Pilot Test 1: The Addition of an Extra Staff Person

Description of Pilot Test: An extra staff person was hired by the Township of Stirling Rawdon over an eight month period (October 2006 to May 2007) to assist at the Springbrook waste site, which had only one depot attendant supervising all activities at the landfill including garbage drop off, collection of fees from the public, and management of the scrap piles and recycling depot.

The intent of the pilot was to measure whether an extra attendant resulted in higher recycling rates. The additional attendant performed tasks at the recycling depot that may not have been performed by the main depot attendant if taken away to perform other landfill related tasks. The pilot measured the total tonnage of recyclables collected over the eight month period and compared it with the total tonnage of recyclables collected during the same time span from the previous two years.

Pilot Test Results: The total amount of recyclables collected over the 8 month pilot (October 2006 – May 2007) resulted in a 3.3% and 7.9% increase compared with similar time periods for the two previous year (see Table 3.1).

Table 3.1: Total Recycling Collected over the Past 3 Years

8 month Period	Total Recycling Tonnage Collected (metric tonnes)	Total Increase or Decrease from the Previous Year (metric tonnes)	Percentage Change from the Previous Year	Percentage Change when Comparing Results from each Year to Pilot Test Year
One depot attendant				
October 2003 – May 2004	51.91			
October 2004 – May 2005	55.13	3.22	6%	3.3%
October 2005 – May 2006	52.75	(2.38)	(4.3%)	7.9%
Pilot Test – Additional depot attendant				
October 2006 – May 2007	56.94	4.19	7.9%	

The test results suggest that the additional depot attendant helped to increase the amount of recyclables collected at the depot. The addition of an extra staff person had a positive impact on Springbrook's depot recycling program. The benefits provided by the additional depot attendant are summarized as follows:

- Increased time to monitor activities at the recycling depot – having a second attendant ensured that the depot had a staff person available at all times to provide additional monitoring activities and customer assistance;
- A significant improvement in the appearance of the site – the site appeared to be better organized with the additional staff person, especially in the case of the reuse area which

had become unmanageable due to the lack of time available to maintain the area with only the one attendant in charge;

- More time devoted to helping people with recycling, including proper sorting - A depot attendant was always observed to be actively helping people with their recycling. In contrast, the former depot attendant could not always be available to assist people with recycling because a significant amount of time was consumed with other duties.

4.2 Pilot Test 2: Testing the Effectiveness of Different Recycling Depot Layout Designs

Description of Pilot Test: Two recycling depot designs were pilot tested to determine if they improve the quality of recycling. The level of recyclable contamination (recycling errors - per customer car and per cart) was tracked on a weekly basis and compared for each new layout style and the traditional layout common at most recycling depots in the Quinte Region. The traditional approach involves providing a continuous row of '95 Gallon' carts with no physical dividers between each category of recyclables. Each cart has a label located on the inside of the lid, which identifies the type of recyclables collected (see Figure 6).



Figure 6: Traditional approach with text labels used on the lid of a '95 Gallon' cart

The pilot test was nine weeks in duration (a different layout was tested each week). Each new layout was tested for three weeks and compared with the traditional layout also tested for three weeks. The following new layouts were tested:

- **'Text Only' Sign:** The labels on each cart were removed and replaced by two overhead signs, each representing a different category of recyclables. Each sign contained a text list of all recyclables collected for that category (see Figure 7). A physical divider was used between the two categories of recyclables.
- **Picture/Graphic Sign:** The labels on each cart were removed and replaced by two overhead signs, each representing a different category of recyclables. Each sign had a combination of text and supporting graphics, representing the recyclables collected for that category (see Figure 8). Although graphics were mainly used, one of the signs

contained a picture as well. A physical divider was used between the two categories of recyclables.



Figure 7: 'Text Only' Signs Used for Pilot Test



Figure 8: Picture/Graphic Signs Used for Pilot Test

Pilot Test Results: The layout with the graphic/picture signs resulted in the lowest contamination rate. In comparison to the traditional layout, it had 61% fewer recycling errors per car. The 'text-only' sign did not perform as well with only 3% fewer recycling errors per car (see Table 3.2).

Table 3.2: Contamination (Errors per car)

	Traditional Layout	Text Only Layout	Picture/Graphic Sign Layout
# of Errors Per Car			
Week 1	1.30	2.20	0.80
Week 2	1.00	0.67	0.38
Week 3	0.75	0.37	0.08
Total Average	1.04	1.01	0.41

The results are even more dramatic when examining the number of errors per ‘95 Gallon’ cart. In comparison to the traditional layout test results, the picture/graphics sign produced 73% fewer contamination errors and the ‘text only’ sign produced 49% fewer contamination errors (see Table 3.3).

Table 3.3: Contamination (Errors per Cart)

	Traditional Layout	Text Only Layout	Picture/Graphic Sign Layout
	# of Errors Per Cart		
Week 1	3.04	1.86	1.37
Week 2	2.55	1.03	0.21
Total Average	2.80	1.44	0.77

Note: due to resource limitations, the cart analysis was conducted over a two week period only

The new layouts appeared to overcome some of the common problems and frustrations encountered by customers using the recycling depots. For example, some customers were very frustrated with the traditional layout because it did not have a physical divider between carts which made it difficult to determine where one recycling category began or ended. Unlike the traditional approach, the new layouts provided physical dividers (tables), so people could differentiate between the different categories of recycling carts.

Many people voluntarily commented that the signs with graphics made it faster and easier for them to process the information. One resident stated that, “The use of pictures is a fast way to get the message across”. It also serves as a reminder for items that people tend to place in the wrong recycling category. Another resident commented that the picture/graphic signs provided better clarification of certain terms. In general, the graphic signs provided the following benefits:

- They resulted in a significant reduction in recycling contamination;
- People looked at them more than the ‘text only’ sign;
- They helped some people process the information faster;
- Some residents may not be adept readers for a variety of reasons, so picture/graphics helped provide visual information;
- They served as a reminder for items that people tend to place in the wrong recycling category;
- They helped ensure that people understood the meaning of each item listed (ex. tetra pak);
- Replacing the labels on each cart with large picture/graphic overhead signs was found to be less overwhelming for the customers.

4.3 Pilot Test 3: Placement of Posters in High Traffic Areas to Promote the Recycling Depot

Description of Pilot Test: Posters were placed in high traffic areas in the community of Coe Hill, to inform the public of recycling depot hours and location. The posters were posted at the local grocery store, LCBO store, post office, two local restaurants, gas station, public library, and town office.

A survey at the landfill and recycling depot was used to determine the effectiveness of placing posters in the high traffic areas to promote the recycling depot. Unfortunately, the pilot test was conducted during the off-season and would have been more relevant had it been conducted during the high season when there are more non-permanent residents in the area.

Pilot Test Results: The pilot test findings revealed that the posters had little to no effect in prompting people to recycle and the vast majority of people did not notice them. Only 8 of the 60 people surveyed acknowledged viewing at least one of the posters. More than half of the people surveyed (35) simply did not notice the poster while 17 people did not see the posters because they were not shopping in Coe Hill during that time period.

All of the people who saw the posters were permanent residents with the exception of one cottager. The permanent residents indicated the sign did not prompt them to recycle because they already did. The cottager was the only person who communicated that it prompted her to recycle.

Permanent residents tended not to observe the signs because they already know the schedule and routines of the recycling depots. They contact the township office or rely on word of mouth when they are unsure of something. Many people communicated that they obtain waste site information from their tax bill and waste site card. Posters may be useful for permanent residents when communicating any changes such as holiday hours.

In order to determine if posters might be effective in educating tourists and cottagers, the pilot test should be conducted during the summer peak season. It is important not to overlook the fact that the only cottager who saw the poster said that it prompted her to recycle. This indicates that promoting the depot in high traffic venues during the summer season may be an effective way to reach cottagers and tourists.

4.4 Pilot Test 4: Testing the Effectiveness of the Depot Attendant Education Material

Description of Pilot Test: An education manual was developed for the depot attendants containing important information about operations at the depot including:

- what can and cannot be recycled;
- how to handle certain recyclables;
- contamination of recyclables;
- how to deal with overflow of recyclables;
- the lifecycle of recyclables;
- relevant regulations;
- an outline of 'who to call for what';
- an overview of the 'Big Picture' of recycling with a brief explanation of relevant groups such as Waste Diversion Ontario and Stewardship Ontario; and
- a listing of helpful web sites.

Once the education manual was distributed and reviewed, the depot attendants were consulted about the manual's effectiveness as an education tool. Refer to Appendix 10 for a sample of the education manual that was prepared for depot attendants. They were asked to complete a Feedback Form, an optional Confidential Question, and a Depot Attendant Quiz (see Appendix 11).

Pilot Test Result: Overall, the attendants were highly appreciative of the education manual and thought it would serve as a good reference booklet as well as an excellent training tool for new employees. More specifically, the survey queried 24 depot attendants about specific issues:

Usefulness of Education Manual - 71% of the depot attendants surveyed deemed the education manual to be 'useful' or 'very useful' and 21% of attendants found it 'somewhat useful' and 8% referred to it as 'not useful'.

Extent to which the Education Manual was Read - 63% of the depot attendants 'thoroughly read' the manual or 'thoroughly read the manual and reviewed it again' while 25% read 'most of it', 4% read 'less than half of it', and the remaining 8% did not read it.

Effort involved in Reading the Education Manual - 78% of depot attendants found it to be 'no problem' to read or 'very easy' to read, 13% found it 'very challenging' to read, and 9% found it 'somewhat challenging'.

Most Popular Section of the Education Manual - The favourite section was the chart on what can and cannot be recycled. The section explaining the lifecycle of recyclables was also popular. Some attendants suggested that these sections be continually updated.

5. Conclusions

The recommended activities that form the foundation of the report were obtained through observations during site visits and feedback collected from in-depth interviews with 19 depot attendants (some are also waste site managers) at sixteen rural recycling depots located in Hastings County and Prince Edward County. The implementation of these recommendations should contribute to improving recycling at the rural recycling depots throughout Quinte Waste Solutions' (QWS) service area and Ontario communities.

Already, some changes are being implemented in the QWS service area. An education manual was created for use by depot attendants and distributed to all depot attendants who participated in the project. The depot attendants reviewed the manual and provided comments and suggestions for improvement. As a result, QWS intends to modify the education manual based on the evaluation results and when completed, the manual will be redistributed to the depot attendants.

In addition, QWS is in the process of revamping its communication and informational materials by incorporating the new knowledge gained from this study.

Key Suggestions for Future Projects and Further Areas of Study:

Municipalities should consider hiring a supervisor responsible for overseeing depot attendants and providing them with support. A supervisor could be hired to oversee a number of rural depots in a designated area, with municipalities sharing the costs.

A formal method of communication (such as a regular newsletter) should be established to share ideas and keep depot attendants abreast of new information and changes. Many depot attendants had great ideas for organizing their rural depots. Further opportunities to exchange these ideas should be researched and investigated.

Depot attendants expressed a desire for educational support in order to keep them updated about changes to depot operations. The positive reception to the education manual indicates that it is well worth the effort to invest in educational support and ensure that the manual is routinely updated.

Municipalities should designate a person responsible for overseeing promotions and outreach at the municipal level in order to promote the rural depot with a more coordinated approach rather than a disconnected, piecemeal approach.

More research is needed on effective ways to reach the seasonal population. All of the pilot tests occurred during off-season when cottagers are usually not present. For example, the poster pilot test results (Pilot Test 3 in Section 4.3) indicated that the poster was not effective in reaching permanent residents. The poster may be more useful to the seasonal populations but this would require further testing. Other promotional and communication strategies for reaching cottagers should be pilot tested. For example, direct mailings, placing advertisements in local newspapers, and/or hiring someone to distribute literature directly to the cottagers during peak season.

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Interviews

Consultation with Dave MacMullen, Fire Prevention Officer with the City of Belleville. October 13, 2006.

Interview with Martin Shanahan, Owner of Shanahan's of Phelpston, June 25, 2007.

Interview with Joseph Simonetti, Sales Representative of ATS Containers, June 2007.

Interview with Ralph Baumung, President and Owner of Baumung Industries, September 17, 2007.

The Following Municipal Staff Members were Consulted:

Roger Taylor, Manager of Public Works for the Township of Stirling-Rawdon and Centre Hastings.

Doug Parks, Clerk for the Municipality of Centre Hastings.

Kevin Heath, CAO for the Township of Stirling-Rawdon.

Jason Post, Road Superintendent, Township of Limerick.