

LAC LA BICHE COUNTY SOLID WASTE TRANSITIONAL PLAN

2011/2012

Environment & Agriculture Services Department



Solid Waste Transitional Plan

Background/History:

The Solid Waste Transitional Plan has been developed by the Environment & Agriculture Services Department as a means of dealing with the solid waste management issues in Lac La Biche County. The issue of solid waste in Lac La Biche County has been ongoing for several years, and continues to increase as our landfills reach the limit of volume capacities. This Solid Waste Transitional Plan encompasses various options for reducing waste, and presents numerous services to be provided to ratepayers in order to improve methods for dealing with solid waste and recyclables in the County.

The exploration of waste management options dates back to 1992; which included the possibility of transfer stations and hauling refuse to the Hylo Landfill. A few years later, the Regional Waste Management Commission was formed (1999) and it was concluded that a study into a regional landfill was necessary as landfill space was limited. Several Landfill Site Evaluation and Investigations have been completed since. In 2008, a series of reports were completed, including a Waste Management Plan for Lac La Biche, Residential Waste and Recyclable Collection Study for Lac La Biche, and a Historical Resources study for the Hylo site. In 2011, numerous presentations and Strategic Sessions were held in order to address resident concerns, initiate a revised draft for a Waste Management Plan (and corresponding levels of service), and to further explore options for solid waste and recycling options.

The Hamlet of Lac La Biche currently receives the services of a Curbside Pickup Program, which provides residents with the convenience of having waste and recyclables collected on a weekly basis. Commencing at the end of June, 2011, staff from the Environment & Agriculture Services Department conducted surveys with residents in Lac La Biche County in order to receive their feedback in regards to the possibility of expanding and *enhancing* the Curbside Pickup and Recycling Program. Currently, two sets of surveys have been conducted and the results have been compiled into summary reports. The popularity of an enhanced program, as evident in the reports, indicates that residents in the County wish to receive an enhanced level of service. These new services would help reduce some of the waste issues in our County, by increasing recycling and diverting waste from our landfills.

Purpose:

The main purpose of the County's Solid Waste Transitional Plan is to enhance the Waste Management services in Lac La Biche County as requested by residents/ratepayers. The feedback and concerns that have been brought forward by County residents requires attention and the appropriate response actions. The formation of a new Solid Waste Committee will assist in addressing such concerns and issues, and will guide the County's future solid waste activities and initiatives.

Target Audiences:

All residents/ratepayers of Lac La Biche County.

STRATEGIES	<u>Establishment of a Solid Waste Management Committee.</u>
ACTIVITIES	-Advertisement by administration for committee members.
	-Review of applications by Council, followed by member selection. Committee will consist of: -1 member of Council (Chairman), 2 members of Council, and 4 members at large. It is expected that the committee will meet 6 times a year (unless an issue arises requiring attention). This number of meetings will be adjusted as required.
RESOURCES	-Media to serve as advertisement for Committee (i.e. County Connector) -Council members to screen applicants for the Solid Waste Management Committee.
STATUS	-Following the May 5, 2011 Strategic Session, Council agreed on establishing a Solid Waste Committee. -Advertisement for Solid Waste Committee members commenced in the summer of 2011 and recruitment of members is currently still in progress.
BUDGET	<p>-Advertisement costs for member recruitment: approximately \$240</p> <p>-All expenses* for committee members will abide the “Board Members Remuneration Policy” - Policy No: CS-11-007:</p> <p>-Honorariums for members and chairman:</p> <ul style="list-style-type: none"> • Chairman: \$125/ meeting = \$750/year (based on 6 meetings) • Members: \$100/meeting = \$600/year (based on 6 meetings) <p>=YEARLY TOTAL of \$ 1350 for committee honorariums</p> <p>-Travel expenses:</p> <ul style="list-style-type: none"> • Committee members will be paid \$0.52/kilometre for using a personal vehicle to conduct County business. <p>*Additional expenses may be required as needed, and will follow the same Policy No: CS-11-007.</p>
MEASUREABLE OUTCOMES	<p>The objectives as set out by the Solid Waste Committee will ultimately lead to the following outcomes:</p> <ul style="list-style-type: none"> -Draft a 10 year waste reduction plan. -Draft of a waste reduction communication plan. -Research and review incentives of material recycling and/or enhancement of solid waste by-products for the County. -Tipping fee recommendations. -Draft of a 10 year plan for the residential Curbside Pickup Program -Research the feasibility, establishment, and implementation of composting to generate a reusable resource within the County, of organic waste.

STRATEGIES	-Facilitate the Solid Waste Committee once it has been established.
ACTIVITIES	Hire an expert to provide engineering to the County's solid waste management issue
RESOURCES	An Environmental Engineering Consultant may be required to provide expertise.
STATUS	-The County has appointed AECOM to act in the capacity of providing expertise. -The County is currently in the process of recruiting for a Solid Waste Services Manager, which will assume the responsibility of managing Solid Waste for the County.
BUDGET	-Cost for appointed consultant (presently AECOM): Approximately \$120,000/year -Salary for Manager of Solid Waste Services: \$73,124.59- \$90,564.84
MEASUREABLE OUTCOMES	-The objectives as set out by the Solid Waste Committee will ultimately lead to the following outcomes: -The research of a 10 year waste reduction plan. -Draft of a waste reduction communication plan. -Tipping fee recommendations. -Draft of a 10 year plan for the residential Curbside Pickup Program
RECOMMENDATION	-A Solid Waste Committee will be formed in order to effectively guide the County's operations dealing with solid waste management. Administration will facilitate the process of document preparation and may require outside consultant expertise.

STRATEGIES	<u>Enhancement of Waste and Recyclable Collection</u>
	-Phase I: Investigate the enhancement of the Waste Management and Recycling Program in the Hamlet of Lac La Biche
ACTIVITIES	-Construct and conduct a survey with residents in the Hamlet of Lac La Biche in order to collect feedback on enhancing the current Curbside Pickup Program that is currently in place.
RESOURCES	-Consultant in order to construct a professional survey to be used in the Hamlet of Lac La Biche. This same consultant will also be used to summarize results and create reports based on feedback collected. -Materials/ supplies needed to print off and use the surveys. -Summer staff to conduct the surveys with residents
STATUS	-In 2011, “Marcomm Works” was hired as the consultant to create the survey and survey reports. - From June 22-24, 2011, County summer staff completed surveys with residents in the Hamlet of Lac La Biche. -On July 15, 2011, the “Enhanced Waste Management and Recycling Program Public Opinion Survey Report” was published by Marcomm Works.
BUDGET	Consultant/report fees: \$2,867.03. In-house staff labour for surveys: Approximately \$11,000.
MEASUREABLE OUTCOMES	- 147 surveys were completed in Lac La Biche, which is 16.7 % of the hamlet’s population (approximately 880 homes). -As indicated in the “Enhanced Waste Management and Recycling Program Public Opinion Survey Report”, the majority of survey respondents (66%) were in favour of implementing the Enhanced Waste Management and Recycling Program.
RECOMMENDATION	-Draft implementation plan for council consideration with all necessary budget and target dates. -(See page 8).

STRATEGIES	<p>-Phase II: Investigate the introduction of a Waste Management and Recycling Program in the Hamlet of Plamondon, and rural subdivisions (Beaver Lake, Holowachuk Estates, Young’s Beach, Lac La Biche West, Sunset Bay, and Lakeview Estates).</p>
ACTIVITIES	<p>-Construct and conduct a second survey (Phase II) designed for residents in the Hamlet of Plamondon and rural subdivisions currently receiving municipal water and sewage services. This would serve to collect feedback on introducing the same proposed Curbside Pickup Program that would be implemented in Lac La Biche.</p>
RESOURCES	<p>-Use of the same consultant that was employed for the Phase I survey process. This consultant would produce a second survey to be used in the Hamlet of Plamondon and specified subdivisions. A second report summarizing the results would also be constructed. -Materials/ supplies needed to print off and use the surveys. -Summer staff to conduct the surveys with residents.</p>
STATUS	<p>-Marcomm Works was instructed to create a second survey. -Surveys were conducted by summer staff in Plamondon, Beaver Lake, Holowachuk Estates, Young’s Beach, Lac La Biche West, Sunset Bay, and Lakeview Estates in the beginning of August, 2011. -On September 2, 2011, the “Enhanced Waste Management and Recycling Program Curbside Pickup Program for Plamondon and Rural Subdivisions” report was published.</p>
BUDGET	<p>Based on projections from first survey : Consultation fees– approximately \$3,000.00 In-house staff labour for surveys: Approximately \$11,000.</p>
MEASUREABLE OUTCOMES	<p>-268 surveys were completed, which is 43% of the population for Plamondon and the surveyed subdivisions (approximately 624 homes). -As indicated in the “Enhanced Waste Management and Recycling Program Curbside Pickup Program for Plamondon and Rural Subdivisions” report, a significant majority of survey respondents (69%) were in favour of implementing a curbside pickup program for Plamondon and rural subdivisions.</p>
RECOMMENDATION	<p>-Council approval of the Phase II report and draft implementation plan.</p>

STRATEGIES	-Phase III: Investigate the introduction of a Waste Management and Recycling Program in the remaining subdivisions throughout the County.
ACTIVITIES	-Construct and conduct a third survey (Phase III) designed for residents in the remaining subdivisions that were not previously surveyed. These subdivisions will consist of those in the County that are not currently provided with municipal water and sewer services.
RESOURCES	-Use of the same consultant that was employed for the Phase I and II surveys. This consultant would produce a third survey to be used in the remaining County subdivisions. A third report summarizing the results would also be constructed. -Materials/ supplies needed to print off and use the surveys. -Staff to conduct the surveys with residents. These will be either temporary staff or summer staff (time dependant).
STATUS	-This will be completed following the implementation of the Waste Management and Recycling Program in the following areas: Hamlet of Lac La Biche and Plamondon, and the Beaver Lake, Holowachuk Estates, Young's Beach, Lac La Biche West, Sunset Bay, and Lakeview Estates subdivisions.
BUDGET	Based on previous survey projections – Consultation fees will cost approximately \$3,000.00 According to previous costs, in-house staff labour for surveys will be approximately \$11,000.
MEASUREABLE OUTCOMES	-Survey results will be available upon the completion of the third report (as completed by Macromm Works).
RECOMMENDATION	Conduct Phase III survey in the third quarter of 2012.

STRATEGIES	Implementation of the actual Curbside Pickup and Recycling Program throughout the County
ACTIVITIES	<ul style="list-style-type: none"> -Create a draft document Tender for curbside/ recycling contracts. -Following approval of the draft, it will be submitted for advertising. -Any existing contractors will need to re-submit proposals for contracted services (for ex: Big Jim's and Tom Mihalcheon). -Purchase carts to be distributed to County residents for the storage of their waste and recyclables, using existing staff and administration. -Redraft by laws and policies and seek Council approval.
RESOURCES	<ul style="list-style-type: none"> -Draft will require the approval of Council. -Advertisement of tender will depend on the use of County media (i.e. County Connector) and APC. -Contractor with appropriate collection equipment. -Selection and purchase of carts by procurement policy. -Development of cart inventory system and cart distribution map. -Staff labour to distribute carts to residents (in house). -Development of curb side pickup operational schedule.
STATUS	<ul style="list-style-type: none"> -Draft development is currently in progress. -Market research and corresponding selection of carts is currently in progress.
BUDGET	<p><u>Anticipated Budget for Phases I and II *:</u></p> <p>*The following budget serves only as an estimate. Anticipated budget for the future Phase III portion of the program will be dependent on number of residents included in the program.</p> <ul style="list-style-type: none"> -Advertising costs for RFP: -Based on previous advertising costs, this will cost approximately \$240. <p>-Estimated cost of carts:</p>

	<p>-Standard 240 L carts* (holds 2-4 garbage bag volumes): \$60/cart -Approximately 3100 carts at \$60/cart = \$186,000 for purchase of carts</p> <p>*The standard 240 L cart holds 2-4 garbage bag volumes and has a life expectancy of 7 years.</p> <p>.</p> <p>-Estimated Contracted services*: \$83-\$131 per household/year for :</p> <ul style="list-style-type: none"> • Lac La Biche West, Lakeview Estates, Holowachuk Estates, Young's Beach, Sunset Bay, Hamlet of Lac La Biche <p>-Based on these areas (1279 households) = total cost of \$106,157-\$167,549 / year.</p> <p>\$84-\$132 per household/month for :</p> <ul style="list-style-type: none"> • Plamondon, Clear Water Cove <p>-Based on these areas (152 households) = total cost of \$12,768-\$20,064 / year.</p> <p>*It is estimated that waste will be collected on a weekly service and recyclables will be collected on a bi-weekly schedule (on a separate day).</p>
MEASUREABLE OUTCOMES	<p>-Measureable outcomes will include the selection of the proposals/tenders submitted by the contractors. -Success of the Waste Management and Recycling Program will be measured by various factors, including community feedback, reduction of waste entering landfills, and amount of recyclables collected via the collection service.</p>
RECOMMENDATION	<p>-Implementation of the Enhanced Waste Management and Recycling Program throughout all of Lac La Biche County (phases I and II). Carts will be purchased and distributed to residents and contractor selected to provide curb side pickup services. Program should be fully implemented and operational by June 1, 2012. This date is flexible and is dependent upon numerous factors, including weather conditions (i.e. snow), delays in cart delivery from manufacturer, etc. - Conduct survey analysis of Phase III.</p>

STRATEGIES	<u>Investigation and revision of County landfills (i.e. operation and services)</u>
	-Determine in depth, on site generation of waste from County landfills.
ACTIVITIES	<p>-Place scales at the two major landfills; specifically Beaver Lake and Plamondon. This would provide the necessary data to make an informed decision regarding the waste generated in our County.</p> <p>-Scales would be placed at the specified landfills on a 4 month basis.</p> <p>-To gain accuracy on measurements, after hour agreements would need to be discontinued.</p> <p>All commercial loads would need to be diverted to the Beaver Lake and Plamondon landfills, and <i>commercially hauled</i> loads would need to be diverted to the Beaver Lake landfill.</p>
RESOURCES	<p>-Rental of scales from a company to be used at the specified landfills.</p> <p>-Staff required to monitor and operate scales, and provide tonnage reports</p>
STATUS	<p>-Scales are currently installed at the Beaver lake and Plamondon landfills and have been operational since July 18, 2011.</p> <p>-Operation of the scales will continue on a contract basis.</p> <p>-Data for waste tonnage has been collected and summary reports have been completed (see attached summary to-date).</p> <p>-Currently reviewing summary reports and comparing to Alberta Standards.</p>
BUDGET	<p>-Cost for scales: Approximately \$8600 per month (per scale).</p>
MEASUREABLE OUTCOMES	-Tonnage of waste entering the Beaver Lake and Plamondon landfills (after the elimination of after hour dumping and the diversion of commercial and commercially hauled loads) and extrapolation of waste tonnage generated for the total County.
RECOMMENDATION	-Scales remain in place and continue operating until sufficient data has been obtained, compile complete data and conduct analysis.

STRATEGIES	-Creation of landfill closure/transfer station plans for County landfills
ACTIVITIES	-Plans will need to consider existing landfill life (minimum of 2 years) for budget considerations. Two Waste Transfer Station Designs (WTS) exist: the Grade Separated Design and the On Grade Design. Following the closure of the landfills and the construction of the transfer stations, the waste would be hauled from the transfer stations to the Lac La Biche County Municipal Landfill, or other selected sites.
RESOURCES	-Plans will be completed by AECOM. -Purchase of transfer station bins, and selection of contractor for hauling of waste to County landfill or other selected sites.
STATUS	-In March, 2011, AECOM completed a “Waste Transfer Strategy” for Lac La Biche County. This document consisted of a Transfer Station Structure. -Currently, AECOM has completed closure plan drafts for Craigend, Elinor Lake, and Owl River landfills. Drafts for the remaining landfills are currently in progress. -The corresponding levels of service are also in the process of being established.
BUDGET	<p><u>As provided by AECOM:</u></p> <p>-Approximate cost for closure and reclamation for the seven landfills (Beaver Lake, Plamondon, Craigend, Owl River, Elinor Lake, Hylo, and Rich Lake): \$4,000,000.</p> <p>Transfer station development* : *The following values are based on expanded curb side volumes of waste (not current waste volumes). These costs include:</p> <ul style="list-style-type: none"> -bins (50yrd-\$7,300, 10yrd-\$1,600, 8yrd-\$1450) -bear fence at \$75/m -Road at \$350/m -Site grading -bays (grade separated) at \$45,000 per bay -on grade pad at either \$16/m² or \$23/m² based on presence of landfill cap. -a 20% contingency.

Grade Separated Design:

Site	Cost Estimate	Annualized Cost
Beaver Lake	\$444,960	\$13,671
Plamondon	\$550,560	\$17,031
Owl River	\$525,960	\$15,471
Craigend	\$126,960	\$5,136
Elinor Lake	\$123,480	\$4,788
Rich Lake	\$130,440	\$5,484
Hylo	\$525,720	\$7,740
TOTAL	\$2,428,080	\$69,321

On Grade Design:

Site	Cost Estimate	Annualized Cost
Beaver Lake	\$324,780	\$10,743
Plamondon	\$209,220	\$8,637
Owl River	\$133,980	\$5,838
Craigend	\$126,960	\$5,136
Elinor Lake	\$123,480	\$4,788
Rich Lake	\$130,440	\$5,484
Hylo	\$194,400	\$7,740
TOTAL	\$1,243,260	\$48,366

The following factors are not accounted in design:

- Power and utilities
- Geological investigation for foundations/roads as required
- Land purchase
- Location on existing sites (on landfill cap or native ground).

Operational assumptions include:

- Insurance of \$1500/yr per site
- Annual maintenance of 5% of capital price

Approximate costs for contracted services (hauling of waste):

-\$175/hr for Front End Loader and \$165/hr for Roll-off trucks taking waste to County landfill at designed pickup frequency.

	<p>Current engineering costs:</p> <p>\$277,470.50</p>
MEASUREABLE OUTCOMES	-The created plan will guide the eventual closure of the County landfills, and the establishment of the transfer stations (with corresponding service levels) in order to meet Alberta Environment regulations.
RECOMMENDATION	<ul style="list-style-type: none"> -Grade Separated transfer stations are setup at Beaver Lake and Plamondon. On Grade stations are setup at the remaining sites (Rich Lake, Craigend, Owl River, Hylo, and Elinor Lake). Contractor is selected to operate trucks and un-loading of bins in order to haul waste to the County landfill. -Prepare tender documents to construct transfer sites and seek approval. - As landfill closures occur, transfer stations will be developed (at the same time).

STRATEGIES	-Determine days and hours of operations for existing landfills (and possibility of transfer stations) as requested by the public.
ACTIVITIES	<ul style="list-style-type: none"> -Conduct a survey to receive public feedback regarding current operation of County landfills. -Based on survey results, reduce the services of existing landfill daily operations in order to improve feasibility and financial efficiency.
RESOURCES	<ul style="list-style-type: none"> -Staff labour will be required for the following: -Creation of survey -Conduction of survey at landfills -Completion of report with summary of survey results
STATUS	<p>The “Lac La Biche County Landfill User Survey” was conducted in September, 2011 (for a duration of two weeks).</p> <ul style="list-style-type: none"> -These surveys were completed at the Owl River, Plamondon, Elinor Lake, Beaver Lake, Hylo, Rich Lake, and Craigend landfills. -Each survey was site specific and was conducted by landfill operators as residents entered the landfill. -The survey consisted of questions pertaining to waste volume, frequency, and date/time of landfill visit. - Conducting these surveys and summarizing the results would enable the County to establish a baseline of programs and services as requested by landfill users. -Report summaries have been completed (as attached).
BUDGET	<p>Reduction in cost:</p> <ul style="list-style-type: none"> -Reducing the days of operation for existing landfills to the recommended days concluded by survey results (page 15) will result in a cost savings of \$171, 429 a year.
MEASUREABLE OUTCOMES	Summary and evaluation of landfill services, followed by corresponding adjustments of policies and bylaws.
RECOMMENDATION	Based on survey summaries, the recommendations regarding revisions to landfill services (days and hours of operation) are as follows:

Landfill	Recommended Days of Operation:						
	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Craigend				✓			✓
Owl River	✓				✓	✓	
Plamondon			✓	✓		✓	✓
Rich Lake	✓					✓	
Hylo				✓			✓
Beaver Lake		✓	✓	✓	✓	✓	✓
Elinor Lake							✓

-At all of the above landfills, it is recommended that the hours of operation remain the same (9am-5pm) for each day of operation.

-New landfill/transfer site days and hours of operation to come into effect April 1, 2012.

STRATEGIES	-Reduction of waste by directing the majority of it to a reusable resource.
ACTIVITIES	<ul style="list-style-type: none"> • Implementation of 24/7 community recycling bins (Pilot project). -Implementation of 24 hour recycling bins at selected County halls (Rich Lake, Craigend, Owl River, and Hyllo) and community locations (two bins in Lac La Biche, and one bin in Plamondon). These bins will be monitored via lighting systems (as currently provided in the hall yards and community locations) and other required monitoring equipment. The operation of these bins will run as a pilot project on a one year duration. -These recycling bins would encourage residents to recycle at their own convenience. - A contractor would be hired to collect the recyclables (specifically paper, plastic, and cardboard) and transport to the recycling center. • Implementation of reusable centers at the landfills as a recycling initiative. -These centers will serve as temporary storage sites where individuals can drop off items of value for reusable exchange. These centers will run on a trial bases and continue based on success. • Construction of composting site(s) at Beaver Lake and Plamondon County landfills (Pilot project). -Composting sites will be constructed at the Beaver Lake and Plamondon County landfills. This will be reviewed once Solid Waste Committee is established. • Implementation of a “Wood Chipping” Program. -A wood chipping machine (contracted service) will be operational and mobile within specified County landfills. Resulting wood chips will be used for eco-ground cover in parks, playgrounds, erosion control, and potential landfill cover.
	<ul style="list-style-type: none"> • Construction of a “Waste to Energy” Pyrolysis plants -The implementation of a central Waste to Energy plant would provide a new technology that accepts waste (sludge and solid waste) and breaks it down until energy products are obtained. These plants operate on approximately 30 metric tons of mixed waste a day. This would require the diversion of all of the waste that is currently landfilled to seven different locations, to one specified plant location. -With this process, the waste enters a chamber in a machine called a pyrolysis reactor. This reactor is set at a temperature of 1700 °C and breaks down the waste by thermal degradation without using oxygen. <p>-This technology is capable of:</p>

	<ul style="list-style-type: none"> ➤ Converting carbon-based waste (landfill, tires, residential waste, sewage sludge, wood chips, plastic, etc) into hydrocarbons (i.e. oil) and Carbon Black. ➤ Producing synthetic gas; this is usable by any energy generator ➤ Producing heat; this can be used to generate steam. This can also be used for power generation. ➤ Producing water suitable for irrigation. <p>Benefits include:</p> <ul style="list-style-type: none"> -no production of harmful gases (since the process is completed in an oxygen free environment). -no requirement of water. -no production of harmful by-products that affect the land. This process actually cleans the land and soil from existing buried garbage. -entitlement to Carbon Credits. -the acceptance of waste from the source without the need for separation or segregation. -no need for separate land for the plant; it is located inside a landfill. -a cycle time of less than 2 hours. -process is independent of weather
RESOURCES	<p>Recycling Bins:</p> <ul style="list-style-type: none"> -Purchase and installation of bins at the selected halls and community locations. -Potential monitoring equipment (in addition to the lighting systems already in place). -Contractor to pick up and transport recyclables in bins. -Media to serve as advertisement for a Request for Proposal or Tender (i.e. County Connector). <p>Reusable Centers:</p> <ul style="list-style-type: none"> -Shelters will need to be purchased and set up. -Construction of the shelters will require staff labour. <p>Composting site(s):</p> <ul style="list-style-type: none"> -Resources include the construction of the composting site(s). -Licensed operator for the site(s). <p>Wood Chipping Program:</p> <ul style="list-style-type: none"> -This will depend on selecting a contractor with the appropriate wood chipping machine. This contractor will also be responsible for the operation of the machine at the landfills.
	<p>Waste to Energy Plant:</p> <ul style="list-style-type: none"> - Contractor to set up and operate Pyrolysis plant at a chosen landfill location.

<p>STATUS</p>	<p>Recycling Bins: -Research regarding implementation of project is currently in progress.</p> <p>Reusable Centers: -Reusable centers (multipurpose shelters) are currently set up at the Beaver Lake, Plamondon, Owl River, Hylo, and Rich Lake landfills</p> <p>Composting site(s): -The implementation of the composting site(s) is currently under investigation.</p> <p>Wood Chipping Program: -A contractor for the wood chipping service has been contacted and quote is currently pending.</p>																					
	<p>Waste to Energy Plant: -. Contractors have been contacted to receive operational costs and more information regarding the process and feasibility of the implementation of a Waste to Energy Plant in the County. -These contractors have been requested that a 30 day trial with the plant at the Beaver Lake landfill is completed prior to further decisions being made. -Currently, SCL is interested; negotiations are in progress. -Decisions regarding the feasibility of the plant will follow.</p>																					
<p>BUDGET</p>	<p>Recycling Bins: -The following costs are provided only as an estimated quote and may be revised with further research.</p> <p><u>Front load:</u> -includes trucking, rental, servicing. -billed on calendar month, but serviced on a weekly schedule *(gain services throughout the year) -when more than one bin per location, additional bins are at ½ price.</p> <table border="1"> <thead> <tr> <th>BIN SIZE</th> <th>SERVICE FREQUENCY</th> <th>PRICE/MONTH</th> </tr> </thead> <tbody> <tr> <td rowspan="4">4 yrd front load bin</td> <td>Monthly (once every 4 weeks)</td> <td>\$70.00</td> </tr> <tr> <td>Bi-weekly</td> <td>\$140.00</td> </tr> <tr> <td>Weekly</td> <td>\$250.00</td> </tr> <tr> <td>Twice/week</td> <td>\$450.00</td> </tr> <tr> <td rowspan="4">6 yrd front load bin</td> <td>Monthly (once every 4 weeks)</td> <td>\$85.00</td> </tr> <tr> <td>Bi-weekly</td> <td>\$170.00</td> </tr> <tr> <td>Weekly</td> <td>\$260.00</td> </tr> <tr> <td>Twice/ week</td> <td>\$470.00</td> </tr> </tbody> </table>	BIN SIZE	SERVICE FREQUENCY	PRICE/MONTH	4 yrd front load bin	Monthly (once every 4 weeks)	\$70.00	Bi-weekly	\$140.00	Weekly	\$250.00	Twice/week	\$450.00	6 yrd front load bin	Monthly (once every 4 weeks)	\$85.00	Bi-weekly	\$170.00	Weekly	\$260.00	Twice/ week	\$470.00
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	<p><u>Roll-off Pricing:</u> - rental of 30 cu.yrd bins: \$200/month - roll-off trucking rate: \$165/hr</p> <p>Reusable Centers: - 5 shelters at approximately \$450/shelter= \$2250 (TOTAL).</p> <p>Composting Site(s): - Research regarding installation, operation, and feasibility of the composting site(s) is currently in progress. It is estimated that it will cost approximately \$120,000-130,000 to setup pad and operate.</p> <p>Wood Chipping Program: - Quote for the wood chipping service is pending; however, an available budget of \$30, 000 has been established for the year of 2011.</p>
	<p>Waste to Energy Plant: Estimated costs include:</p> <p>- Approximate tipping fees for each ton of waste processed:</p> <ul style="list-style-type: none"> • \$35 per ton of fresh solid waste • \$48 per ton of fresh sewage sludge • \$65 per ton of the waste currently in the existing (or old) landfills <p>- Power loads will need to be supplied to the plant. - Construction of a separate gate for the contracted plant company. - Contractor costs associated with process designs, drawings, etc.</p>
<p>MEASUREABLE OUTCOMES</p>	<p>Recycling Bins: -Success of bins will be determined based on community feedback, appropriate usage of bins, and amount of permitted recyclables put in the bins by County residents.</p> <p>Reusable Centers: -Success of the centers will be determined based on reports provided from landfill operators. These reports will consist of the number of customers that have been using the centers. Operators will also be asked to provide feedback on any notable successes/failures of the centers.</p> <p>Composting Site(s): -Amount of organic waste dropped off at the compost site(s) will be measured and recorded. The collected compostable waste will be considered waste that was diverted from entering the landfills.</p>

	<p>Wood Chipping Program:</p> <ul style="list-style-type: none"> -Success of the wood chipping program will be determined by the potential reduction in burnable costs (which is estimated at a total yearly cost of \$30,000). -Amount of wood chips produced will also be measured and recorded (this will also classify as waste diverted from the landfill). -Costs will also be reduced with the use of the chips in parks/playgrounds, landfills, and areas requiring erosion control.
	<p>Waste to Energy Plant:</p> <ul style="list-style-type: none"> -Success of the pyrolysis system will be determined by waste tonnage entering the plant, and the resulting output products*. <p>*100% of the output products from the waste treatment process are owned by the pyrolysis contractor.</p>
<p>RECOMMENDATION</p>	<ul style="list-style-type: none"> -Further research and implementation of the 24/7 recycling bin pilot project at selected halls and community locations. This will include purchase of bins and selection of contractor to haul recyclables to recycling center. -Operation of the reusable centers continue based on success as reported by landfill operators. -Further research and implementation of the composting site pilot project at the Beaver Lake and Plamondon landfills; based on feasibility. -Selection of contractor to provide a mobile wood chipping machine and the associated services to the landfills in the County. -Selection of a contractor to install a Waste to Energy Plant (pilot project) at a centralized landfill location where the majority of the waste generated in the County will be broken down into reusable energy sources.

STRATEGIES	Reduction of plastic bag usage in the County
ACTIVITIES	<ul style="list-style-type: none"> -After obtaining Council approval, conduct surveys with local businesses in order to collect feedback on the notion of reducing plastic bag usage. -Survey results would then be reviewed by the anticipated Solid Waste Committee. -Based on results, the following potential options to be implemented could include: <ul style="list-style-type: none"> -Imposing a levy on single-use plastic bags. -Providing a tax break to store owners restricting the use of plastic bags. -Providing incentive programs for customers using reusable cloth bags. -Adding a tax to store owners using plastic bags. - Introducing the idea of paper bag usage. -Placing a total ban on plastic bag usage.
RESOURCES	<ul style="list-style-type: none"> -Requirement of staff to construct and conduct a survey for local businesses. -Solid Waste Committee to review results and recommend the appropriate action plan.
STATUS	<ul style="list-style-type: none"> - A first survey was conducted in 2008 with local businesses. -In 2009, Council approved the purchase of County cloth bags which were distributed to County residents. At this same time, educational programs were also delivered in grocery stores and schools throughout the County. -In order to revisit the issue and take further action on the plastic bag usage in the County, a second survey has recently been constructed but has not yet been conducted with the businesses. Completing a second survey and comparing results to those obtained in 2008 would enable the County to determine if attitudes toward plastic bag usage have changed. Survey results would then be presented to the impending Solid Waste Committee, followed by their appropriate recommendation to council.
BUDGET	<p>Based on previous purchases through Environment Initiative funding – \$5,000.00</p> <ul style="list-style-type: none"> -Future costs will be dependent on future recommendations.
MEASUREABLE OUTCOMES	<ul style="list-style-type: none"> -Outcomes would depend on the survey feedback and the recommendations presented to Council by the Solid Waste Committee. -The implemented action plans would be monitored and regulated according to County bylaws.

	-Success of the action plan will be measured through the visible amount of plastic bags ending up on our streets, in the trees, and in the landfills as litter.
RECOMMENDATION	A second survey is conducted with the local businesses and results are compared to those obtained in 2008. Based on the feedback provided, the appropriate plastic bag 'action plan' (as listed in the above activities) will be implemented and corresponding bylaws created and enforced.

STRATEGIES	Increase communication and public awareness/education regarding waste management and current issues in the County.
ACTIVITIES	-Provide recycling workshops and education sessions for the public.
RESOURCES	-This will require occasional use of external resources (consultants, and other organizations involved with solid waste; ex. Alberta Recycling Management Authority) to prepare public presentations. -Additional workshops and open houses will require the use of in-house staff and supplies.
STATUS	-Educational presentations were delivered to local grocery stores and schools throughout the County in 2008. -In previous years, brochures regarding solid waste and recycling at our landfills have been created and distributed to County residents. -This will be ongoing and is currently in the developmental stage (dependant on budget).
BUDGET	-Associated costs will include the fees associated with open houses, workshops, etc. presented by external organizations and companies. -Costs will be dependent on future events and will also be restricted by allotted budgets.
MEASUREABLE OUTCOMES	-Success of such initiatives will be measured by: -Community turnout at such events. -Changes in public perception and behaviour. - An increase in the concern regarding our waste management issues.
RECOMMENDATION	-Various organizations within the local are contacted to prepare workshops/seminars and open houses regarding waste management. -These in-house sessions would also increase public interest and awareness with some of the major waste issues in the County, and achieve the goal of establishing a communication plan as set out by the Solid Waste Committee.

