March 28, 2008

Board Secretary
Ontario Energy Board
P. O. Box 2319
2300 Yonge Street, Suite 2700
Toronto, Ontario M4P 1E4

Re: 2007 Annual Report CDM Third Tranche Funding
North Bay Hydro Distribution Limited
RP-2004-0203\EB-2005-0204

1.0 Introduction

On March 16, 2005 North Bay Hydro Distribution Limited ("North Bay Hydro") was granted approval of its Conservation and Demand Management ("CDM") plan (RP-2005-0020/EB-2005-0340). The total approved budget for the CDM plan is $1,274,500.

Early in the second quarter of 2007 it became apparent that the full Third Tranche CDM expenditures would not be spent prior to the approved date of September 30, 2007. Two requests were sent to the Ontario Energy Board to extend the completion date. The first request was submitted on June 14, 2007 and received approval on August 23, 2007 (file number EB-2007-0664) to extend the completion date to April 30, 2008 for the commercial, industrial and institutional demand management activities.

Following receipt of the above approval EB-2007-0664 North Bay Hydro determined the need to extend the completion date to April 30, 2008 for incremental Third Tranche CDM expenditures to carry on with most of the remaining CDM programs. The second request was submitted to the Ontario Energy Board to extend the completion date to April 30, 2008 on September 24, 2007. On October 1, 2007 the Ontario Energy Board approved (file number EB-2007-0779) the extension of the completion date to April 30, 2008 to complete CDM activities.

This submission is intended to satisfy North Bay Hydro's Conservation and Demand Management Plan reporting requirements for 2007. Enclosed are three hard copies, one electronic copy in PDF format consisting of the entire report and a second electronic copy of the appendices in excel. There are two excel files: one for appendices A, B and C; and a second with Appendix D. Appendix D is the North Bay Hydro Assumptions and Measures List as explained in section 3. The electronic copies are included on a disk with the three hard copies.

On January 13, 2005 North Bay Hydro submitted its Conservation and Demand Management Plan to the Ontario Energy Board. Approval was received from the Board on March 16, 2005. Of the eight individual programs proposed, the priority for 2007 was to carry on with six of the eight programs implemented in 2005 and 2006, namely: Water Heater Tune-up, Fridge Buy-back, Information Based, Commercial/Institutional/Industrial Demand Reduction, Renewable Energy Opportunities and the LED Traffic Light Pilot (identified as an optional program). The two programs where no further work on CDM was accomplished in 2007 and none planned on CDM for 2008 were EnerGuide for Houses and System Optimization Study. In addition no further work on CDM was accomplished in 2007 and none planned on CDM for 2008 for two of the Optional Program pilots: Street Lighting and Thermal Energy Storage that consisted of a demonstration Electrical Thermal Storage Unit ("ETS"). The Domestic Hot Water Load Control Optional Program was never investigated to the point of performing a technology screening analysis. Some investigative work was undertaken on two further Optional Programs for Sentinel Lights Replacement and Programmable Thermostats (not specifically considered in the CDM plan). They both passed the technology screening analysis, but not implemented due to the lack of resources.

The Renewable Energy Opportunities program generated more interest. In addition to the funding allocated to the City of North Bay to determine project feasibility for the development of a landfill gas project, a further commitment was made to the City of North Bay for the development of a Solar Photovoltaic (PV) Project. The response to most programs has been very positive.

For most of 2007 all CDM activities have been undertaken by individuals and companies living in and/or based in the City of North Bay.

Table One provides a brief description, summary of the status of each program, costs and kWh savings for 2007 and life to date up to December 31, 2007:

Table One
Summary of CDM Program Implementation – North Bay Hydro

Program	Description	Status	Cost ($) Savings (kWh) 2007	Cost ($) Savings (kWh) Life To Date
Water Heater Tune-Up	Installation of insulating blankets, low flow showerhead, aerators, pipe wrap, compact fluorescents and outlet insulators	Mature program with sufficient activity that surpassed target results under budget. Program complete.	$7,097 103,842 kWh	$74,123 591,884 kWh

Program	Description	Status	Cost ($) Savings (kWh) 2007	Cost ($) Savings (kWh) Life To Date
Fridge Buy Back	Removal and proper disposal of older second refrigerator, pay incentive	Mature program with sufficient activity that surpassed target results under budget. Program complete.	$9,389 58,800 kWh	$76,601 352,800 kWh
EnerGuide For Houses	Promotion of Natural Resources Canada's program with customers with electric heat	Program was cancelled by Natural Resources Canada after large expenses by North Bay Hydro. No further activity or results for 2007	$914 0.0 kWh	$36,536 108,121 kWh
Information Based	Use of various channels to increase awareness of programs and conservation opportunities	Mature program with most emphasis on residential programs – more activity on promotions, give-aways, advertising, etc.	$129,358 561,933 kWh	$189,108 608,913 kWh
Demand Reduction Commercial	Use of audits, studies and incentives to help Commercial customers reduce peak demand, kWh and bills	Eleven projects completed and 37 others active. Faster results with deadline approaching. Over 95% is lighting as noted in Appendix B	$15,763 363,249 kWh	$125,386 916,669 kWh
Demand Reduction Institutional	Use of audits, studies and incentives to help Institutional customers reduce peak demand, kWh and bills	Twelve projects completed and 31 others active. A great deal of activity. About 52% lighting and 27% motors.	$165,761 1,438,051 kWh	$232,746 1,682,824 kWh
Demand Reduction Industrial	Use of audits, studies and incentives to help Industrial customers reduce peak demand, kWh and bills	Eight projects completed and 35 others active. Market is small in this sector, continues slow. Lighting is 88% and control systems 12%.	$32,617 639,731 kWh	$95,579 968,389 kWh

Program	Description	Status	Cost ($) Savings (kWh) 2007	Cost ($) Savings (kWh) Life To Date
System Optimization Study	Optimization of the electrical distribution system	Gathered data and input into model. Roadmap for future work. No further activities planned for CDM.	$0.00	$40,739
Optional Program -- LED Traffic Lights	Developed pilot, full program nearly complete.	City installed LED traffic lights at 37intersections and two pilots, 4 remaining.	$23,266 391,024 kWh	$32,284 409,540 kWh
Optional Program – Street Lighting	Developed pilot for City of North Bay streetlights	Research light harvester and ballast. No further activities planned for CDM.	$1,767 0.0 kWh	$9,673 3,456 kWh
Optional Program – ETS heater	Installed a Demonstration Unit at North Bay Hydro	Shifted to off peak -- from on peak -- from mid peak No further activities planned for CDM.	$0.0 0.0 kWh 0.0 kWh	$5,158 407 kWh 906 kWh
Renewable Energy Opportunities	Working with customers to study feasibility of renewable energy opportunities	Landfill gas project started in 2006 and underway. New Solar Project initiated late 2007.	$44,941 0.0 kWh	$44,941 0.0 kWh
Total $ Total kWh			$430,874 3,556,630	$962,876 5,880,196
Note: The 2005 reporting included participant costs amounting to $32,132.45 in error. This is not included in above numbers and is removed from Appendix A so the Gross CDM expenditures balance.				

2.0 Evaluation of the CDM Plan

Appendices A and C provides an overview of the effectiveness of the North Bay Hydro CDM plan. All initiatives either in progress or completed during 2007 are included in the Appendices. For the residential programs all savings and costs are reported on an ongoing basis, as they are not project oriented. For example at year-end the units implemented and costs incurred are completed and reported in these appendices.

For the Demand Reduction (Commercial, Institutional and Industrial) utility costs are often incurred for projects well in advance of the customer initiating a project for such components as: audits, assisting with applications, meetings, technology screening analysis and preparation of agreements. When this occurs only the utility costs are included in the appendices. For the year 2007, 31 projects were completed and verified with all costs and savings reported. At the end of 2007 there are 73 active projects – same number as of the end of 2006. Following completion and verification including the recalculation of the incentive if required is when the incentive is paid to the customer. Also at that time the Total Resource Cost (TRC) TRC Costs and TRC Benefits are recalculated based on actual costs and energy savings recognizing any changes in the project from the original agreement. The total incentive paid is $134,118 for 2007 and from life to date is $178,274. By the end of April 2008, we will complete over 130 projects with commercial, industrial and institutional customers.

For programs other than demand reduction and residential such as pilots and system optimization the costs are well in advance of any savings. The System Optimization Study program is not expected to proceed as part of CDM Third Tranche, but is a good roadmap for future planning to reduce distribution system losses and improve overall system performance. Currently only the LED Traffic Light pilot shows very good results with a benefit to cost ratio of 1.63. The remaining pilot for Street Lighting and the demonstration project for the ETS heater are not expected to proceed as part of CDM Third Tranche.

Table Two shows the benefit to cost ratios by year and the cumulative values for all CDM programs for the past three years.

Table Two
Benefit to Cost by Year and Life to Date (LTD)

Year	Benefit	Cost	Annual Ratio	LTD Ratio
2005	$450,854	$153,622	2.93	2.93
2006	$787,746	$503,882	1.56	1.88
2007	$1,862,497	$885,240	2.10	2.01

Our 2005 experiences of using estimated savings and costs rather than using verified completed project costs and savings proved somewhat inaccurate. Most of this activity was related to savings causing a temporary overstatement benefits such as the 2.93 annual ratio for 2005. This caused the lower 1.56 in 2006, made the LTD ratio more realistic at 1.88. Increased activity and the completion of projects where money had been spent in previous years resulted in the higher 2.10 ratio for 2007. This trend is expected to continue through 2008.

It should be noted these overstatements and/or understatements were somewhat material in 2005, but have little impact on the overall results to the end of 2007. The major understatement during 2005 is in water savings, not electricity.

To the end of 2007 $962,875.82 was spent of the total CDM budget of $1,274,500, leaving a balance unspent at $311,624. This unspent portion will be spent prior to the submission of the 2009 Annual Report.

3.0 Discussion of Programs

Appendix B follows Appendix A; it provides details for each program as per guidelines. This section is divided into various programs in the same order as those listed in Appendix B. There are frequent references to "Appendix D", which contains the "North Bay Hydro Assumptions and Measures List" for each of the measures that vary from those provided in the "Assumptions and Measures List" that forms part of the TRC Guide. Any variation from the TRC Guide is included in Appendix D whether it is efficient technology, operating time per year, base or energy efficient energy usage, summer or winter peak, energy efficient technology life, incremental cost as well as the energy profile by the eight seasons. Nearly every energy efficient initiative undertaken by customers is unique and is included in the "North Bay Hydro Assumptions and Measures List".

One should note that two additional columns have been added to the "North Bay Hydro Assumptions and Measures List" from what was included in the "Assumptions and Measures List" that forms part of the TRC Guide. The purpose of these two columns is to simplify the calculations for winter and summer peak (pertains mostly to lighting). They are entitled "Base kW' and "Energy Efficient kW".

From hereon the:
"North Bay Hydro Assumptions and Measures List" is referred to as "Appendix D"
and the
"Assumptions and Measures List" that is part of the TRC Guide is referred to as the "OEB Tables".

For various components a proxy is identified or where there isn't one there is an explanation of how the quantities were derived.

The first section "Common Comments" applies to most if not all programs. It is included here to avoid repetition throughout this Section 3.

3.1 Common Comments

Incremental Cost
For most measures the full cost is the incremental cost. For measures in some projects the incremental costs are less than full cost. For some of those measures estimates are requested and obtained from consultants for the difference in cost between the replacement of like-for-like and an energy efficient installation. Where there is a difference in energy efficiency it is adjusted accordingly.

When preparing the agreement with customers the costs are usually estimated by third parties. Once the work is completed there is a verification audit by a separate consultant who visually checks the site to see what is done and then compares what was done with the invoices for material and labour. The invoiced amount is what is used for the final Total Resource Cost calculations included in this report.

Ontario Seasonal Average Avoided Energy Cost (2005 Canadian)

It was noted in the 2005 Annual report that the Ontario Seasonal Average Avoided Energy Cost (2005 Canadian) ended at 20 years for technologies with an equipment life of more than 20 years. This resulted in understating the TRC Benefit. For 2006 and 2007 North Bay Hydro has extended the period to 25 years by using the same Ontario Seasonal Average Avoided Energy Cost (2005 Canadian) for the years 20 through 25. For periods over 25 years, the years are ignored reducing the TRC Benefit and the potential and the lifecycle savings (kWh).

Data Collection

For data collection a third party acceptable to North Bay Hydro and the customer calculates potential energy savings including customer benefits the necessary information to calculate the incentive North Bay Hydro will pay for energy efficiency improvements. The third party is normally a consultant, contractor, supplier or in some cases the customer. The third party will determine what exists at the premises such as types and numbers of lamps, fixtures and ballasts, wattage of each fixture, motor sizes, control systems and hours of use. The third party will determine what can be installed that satisfies a customer and provides the same or better quality for such technologies as lighting, heating ventilation and air conditioning, controls and thermal envelope. The third party will provide a report that shows what energy efficient equipment will be installed together with the estimated cost, types and numbers of lamps, fixtures and ballasts, wattage of each fixture, motor sizes, control systems and hours of use. The report will show the energy savings, equipment life, simple payback (years or months), an explanation of costs, assumptions and recommendations.

North Bay Hydro uses the report as a basis to conduct the necessary technology screening analysis as per the TRC Guide. The information provided normally varies from the OEB Tables. As a result the remainder of section 3 together with Appendix D is necessary to explain the various TRC test inputs as per section 3 of the "Requirements for Annual Reporting of Conservation and Demand Management ("CDM") Initiatives" issued March 3, 2008. This section 3.1 provides a general overview of many of the common elements whereas the other sub sections 3.2, 3.3, 3.4, etc. describes the specifics of various programs and refers to Appendix D for the applicable proxies and the details explained in the first paragraph of section 3.0. Appendix D contains separate worksheets for Residential-Optional, Commercial, Industrial and Institutional. Residential-Optional includes Water Heater Tune-up, Refrigerator Buy-back and any Residential part of a commercial or institutional building that contains living quarters such as a senior's home, nursing home, housing co-op or hotel room. The common portions of the building would be treated as commercial or institutional. Optional programs such as LED Traffic Lights are included on the Residential-Optional Worksheet.

Lighting

Lighting has proven to be the largest portion of the activities thus far. The requested information includes the number of lights, wattages (base case and energy efficient), annual operating time, incremental cost and specifies whether the installation is a retrofit, replacement, new or removal.

The OEB Tables have the same load profile for all lighting except residential whether commercial, industrial or institutional – only the magnitude changes, not the shape. Since the kWh savings for Compact Fluorescent Lights (CFL's) do not agree for the sum of the kWh in the load profile, they are ignored. The load profile for any of the commercial, industrial or institutional lighting is the same; however some components may differ such as hours of use and cost. The proxy is shown in sections 3.6, 3.7 and 3.8. Nearly all commercial and industrial lighting initiatives have different inputs. Each of these is included in Appendix D in worksheets: commercial, industrial, and institutions. The reason for this is that there is almost always a variable that is different than those included in the OEB Tables. There are numerous variables causing this such as energy efficient technology, base case technology, decision type, annual operating time, base kW, energy efficient kW, energy efficient technology life, lifespan hours and incremental cost. The energy efficient technology is the lifespan hours divided by the annual operating time. The energy efficient technology is always based on the life of the lamps estimated operating time except for removals as explained in the next paragraph. The lifespan hours varies by manufacturers, type of lamp and ballast, number of starts per day and design of lamp. This information is available in the specifications obtained from suppliers such as Sylvania and Philips. The incremental cost varies for many reasons such as decision type, required work, location, labour rates and material costs. Free ridership is always assumed at 10%.

When the customer's lighting system is redesigned such that more or less lights are required than what originally existed, then the altered lighting is all considered replacement and/or retrofit. For these changes including the removals, the equipment life is based on the life of the energy efficient technology. Where there is an area of lighting that is no longer required and the lights are removed including wiring, the removal has an equipment life of 18 years. For example, if 50 lights are replaced with 30 lights and all the wiring is changed for the new installation, then the equipment life is 18 years. Although the OEB Tables do not include a specific proxy, this is considered a reasonable life. The only comparable items included on the Residential Worksheet in the OEB Tables are such things as fuel switching to gas clothes dryers, ranges and water heaters with an equipment life of 18 years as per numbers 6 [from Average existing stock to Fuel Switching – Gas Clothes Dryer], 8 [Average existing stock to Fuel Switching – Gas Range] and 35 [Current standard electric water heater to Fuel Switching – Gas Water Heater]. Similarly the only comparable items included on the Commercial Worksheet in the OEB Tables are such things as the second number 27 listed [Elec. Res. Heating, DX cooling to Ground Source Heat Pumps (5 ton capacity)] with an equipment life of 20 years and number 25 [Base Case (30,000 sq ft, 1 storey office) to Winter Free Cooling (water side economizer)] with an equipment life of 20 years. These items from the

Residential and Commercial Worksheets are similar from the point of view they involve major work that is not easy to reverse. The same is true for an entirely new lighting design where the wiring and fixtures are all new.

Lighting – Commercial, Industrial, Institutional and LED Exit Lights

The calculation of the summer and winter peak kW is based on the results in the OEB Tables. The base case kW and energy efficient kW in the OEB Tables appears inconsistent as some wattage includes the ballasts while others don't. For consistency in this report all lights except CFL's will include ballasts. The winter peak kW is derived by taking the difference between base case kW and energy efficient kW and multiplying this difference by a *calculated percentage factor* depending on the type of lights. This factor is 90% for T8's and T5's, averages 85.25% for CFL's and 83.33% for all others. For summer the calculated winter peak kW is multiplied by 95%. This is true for commercial (including institutional), which is based 4,000 hours of operating time, and for industrial, which is based 6,500 hours. For LED lights that operate 8,760 hours, the difference is multiplied by 100%. The longer the lights operate the more likely the lights will be on during the summer and winter peaks. Conversely the less the lights operate, the less likely the lights will operate during the summer or winter peaks.

The assumption that is made in this report is that the *calculated percent factors* (90% for T8's, 85.25% for CFL's and 83.33% for all other lights) apply to winter peaks between 3,250 hours and 6,500 hours. Once over 6,500 hours and it is a business that operates during the weekdays, the lights would have to be on during the peak. For example a business that operates 5 days per week, 24 hours a day all year long would require lights 6,240 hours. Since number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Industrial Worksheet in the OEB Tables is at 6,500 hours and uses the *calculated percent factor* of 90% factor for winter peak, the lighting is calculated over 6,500 hours at 100% as opposed to over 6,240 hours. The same is true for numbers 2 and 3 that follow 1 above.

The 3,250 hours criteria is selected as it is similar to the 4,000 hours criteria at the *calculated percent factor* in that covers all or almost all of the peak hours. If one assumes the business only operates weekdays and always operates during the peak on weekdays less statutory holidays where the peak occurs on weekdays from 7:00 am to 8:00 pm, then the product is 3,250 hours. Some of this period is ignored as it is mid peak, but it is quite likely the lights will be on at that time when they operate the hours before or after the mid peak period. For hours usage less than 3,250 hours, the winter peak kW saving is decreased by using a factor less than the *calculated percent factor*.

For hours usage less than 3,250 hours such as 2000 hours usage, the difference between base case kW and energy efficient kW is multiplied by 2000/3611 for T8's and T5's to calculate the winter peak kW. Similarly for CFL's the difference between base case kW and energy efficient kW is multiplied by 2000/3,812 and for all other lights the difference is multiplied by 2000/3,900.

For example in number 3 of the Commercial Worksheet [2 - T12 34W (78W) 4' lamps pendant mount, 1 EM ballast to 1- T8 32W (38W) w/EL HBF ballast], the saving is 40

watts. Multiplying the 40 watts by 0.9 results in a winter peak kW of .036 and a summer peak kW of (.036*.95) = .034. These calculations agree with what is shown in number 3. If the lights operate 2,000 hours the factor is 2,000/3,611 or 55% as opposed to 90%. The calculated winter peak kW saving is 0.04*.55 = .022 kW and the summer peak kW saving is .022*.95 = .021 kW. Many commercial buildings operate in the range of 2,000 to 3,000 hours. For very occasional usage such as a storage area, the lights may only operate a 100 hours a year thus the factor for T8's and T5's is 100/3611 or 2.8%.

Lighting – Residential

This section applies to all residential CFL's installed in hotel rooms and rooms where residents live within a nursing home, seniors home, housing co-op, etc. The same principles apply as with the commercial, industrial, institutional and LED Exit Lights above except for the following: 1) the average normal operating time is not 4,000 hours but 2,320 hours; 2) the *calculated percent factor* is not 85.25%, but 50%; and 3) there is no summer peak. When the lights operate more than 2,320 hours the *calculated percent factor* is 50% and the winter peak kW is decreased by 50%. When the lights operate at less than 2,320 hours the *calculated percent factor* is less than 50%.

For example in number 15 of the Residential Worksheet [40W Incandescent to CFL Screw-In 11W], the saving is 29 watts. Multiplying the 29 watts by 0.5 results in a winter peak kW of .0145 and a summer peak kW of zero. These calculations agree with what is shown in number 15. If the lights operate 1,000 hours the factor is 1,000/4,640 or 21.6% as opposed to 50%. The calculated winter peak kW saving is 0.029*.216 = .0063 kW and the summer peak kW saving is zero.

Seasonal Energy Usage

Where there isn't a proxy for a load profile included in the OEB Tables, a unique load profile must be developed for each different initiative. North Bay Hydro normally develops the load profile with input from the customer and/or consultant and/or contractor. This may apply to such initiatives as control systems, rooftops, chillers, photocells and occupancy sensors.

The analysis is based on when energy is saved. The number of hours is determined for each of the eight periods (winter peak -- off, on and mid; summer peak -- off, on and mid; shoulder -- mid and off) for each technology with different operating characteristics. Then the total kWh for each of the technologies with different operating characteristics is determined for the eight periods. These kWh values are included in Appendix D and used as input to calculate TRC Benefit.

The calculation for the winter peak (kW) and summer peak (kW) is based partly on the above calculations. The total kW is calculated for each technology with different operating characteristics. Then the hours the energy efficient equipment is turned off is compared to the base case and calculated for both summer and winter. The total kW is decreased for both summer and winter separately by the ratio of the hours the energy efficient equipment is off compared to the base case divided by the total peak hours in

summer and winter. This is a straight-line ratio that recognizes on average that the peaks are reduced by a value that may vary downwards to zero.

These results are summarized for all energy efficient technologies with each customer and included as part of the application, which forms part of the agreement between the customer and North Bay Hydro.

Occupancy Sensors and Dimmer Switches
These are all different because the number of controls and/or sensors and/or dimmer switches, wattage and cost differs for most installations. An energy reduction of 30% is assumed; the same free ridership and equipment life is used as the proxy. For Occupancy Sensors, in all cases except where highlighted in the following subsections, number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet is used as proxy prorating all values except incremental cost, which is normally provided by the customer, contractor or consultant. Similarly for Dimmer Switches and Manual Switches except where highlighted in the following sections, number 23 [2-100 Watt Incandescent bulbs to controlled by a Dimmer Switch] of the OEB Tables in the Residential Worksheet is used as proxy. Please note there are two number 23's in this Residential Worksheet; this is not the same 23 as shown for LED Christmas Lights.

Photocell
Using the Seasonal Energy Usage, a load profile is developed for the eight periods based on the data used to establish Street Light Profile for North Bay Hydro. The source of information for the sunset and sunrise times is as per "Certification by Herzberg Institute of Astrophysics Certification for Sunset and Sunrise times for the National Research Council". The load profile data provides the percent of time the lights are on and off for the winter and summer peak periods. Previous to the installation of the Photocell, the lights were on 8,760 hours per year. After the Photocell is installed the lights are assumed on 4,320 hours. The energy savings including peak periods occur when the lights are on and turned off as a result of the Photocell. Thus the summer savings are highest when the lights are turned off for the daylight periods. By installing the photocell, the lights will be turned off during the winter 61.1% and for the summer 96.5% of the time. These factors are applied to the kW load of the lights to decrease the kW on peak.

3.2 Residential – Water Heater Tune-up

Residential Water Heater Tune-up – (Reference Worksheet "Appendix D Residential-Optional")

The Water Heater Tune-up program was highly successful. The program was completed by the end of June 2007. The total budget was under spent with the target of 300 tanks surpassed by 208.

Most of this program was delivered in partnership with Greening Nipissing, a local non-profit environmental group while the remainder was done by a separate contractor. In addition to discussing the benefits of the Water Heater Tune-up program during the home visits there was a variety of discussion with customers as well as handouts related to energy efficiency, environment and safety. The Water Heater Tune-up program included the installation of a hot water heater tank wrap, compact fluorescent bulbs, aerators and showerheads. Where the visit was to a gas water heater customer, only the compact fluorescent bulbs are provided to the customer. Outlet insulators are installed in some customer premises. Since there is nothing in the OEB Tables for outlet insulators, they are included in number 1 of Appendix D Residential-Optional. The proxy is number 36 [Average existing stock to Caulking Products] of the OEB Tables in the Residential Worksheet for all components except cost and savings. The cost is estimated $0.30 each and the savings are estimated 0.1%. These will vary substantially depending on existing insulation, vapour barrier, etc. The installer would normally pick the worst locations to install one or more. Some outlets are quite cold and outside air often felt.

The other components of the Water Heater Tune-up program are numbers 16 [60 Watt Incandescent to CFL Screw-in 15 Watt], 25 [Average existing stock to Efficient Shower Head], 26 [Average existing stock to Faucet Aerator], 27 [Average existing stock to Faucet Washers], 28 [Average existing stock to Tank Wrap] and 30 [Average existing stock to Pipe Insulation 6-10'] of the OEB Tables in the Residential Worksheet.

Of the $135,082.38 charged to the Information Based Program, $2,862.00 was included in the TRC analysis for Water Heater Tune-up program. This amount is the estimated amount that supports the Water Heater Tune-up program as per the note in section 3 of the requirements for *Annual Reporting of Conservation and Demand Management ("CDM") Initiatives.*

3.3 Residential – Fridge Buy-back

Residential Fridge Buy-back – (Reference Worksheet "Appendix D Residential-Optional")

This program was delivered in partnership with Greening Nipissing, a local non-profit environmental group. The Fridge Buy-back program was highly successful. The program was completed by the end of June 2007. The total budget was under spent with the target of 300 tanks surpassed by 192.

The residential programs complemented each other. For example, during a Water Heater Tune-up, a second hand fridge is spotted and pick up arranged. Similar to the Water Heater Tune-up program discussions and handouts related to energy efficiency, environment and safety were provided to the customer. This is the only residential program with an incentive to entice the customer to take part in the program.

The Fridge Buy-back program is Number 1 [Average existing stock to Recycling Program] of the OEB Tables in the Residential Worksheet. However it differs

substantially in cost. The cost in the OEB Tables is $100 whereas our experience is that the cost averages about $53.00. As a result Number 1 is used is used as a proxy and is found in number 2 of Appendix D Residential-Optional.

Of the $135,082.38 charged to the Information Based program, $2,862.00 was included in the TRC analysis for the Fridge Buy-back program. This amount is the estimated amount that supports the Fridge Buy-back program as per the note in section 3 of the requirements for *Annual Reporting of Conservation and Demand Management ("CDM") Initiatives*.

3.4 Residential – EnerGuide for Houses

Residential EnerGuide for Houses

This program was delivered in partnership with Greening Nipissing, a local non-profit environmental group. As per the 2006 Annual Report, the cancellation of the program by Natural Resources Canada had a large negative impact on the North Bay Hydro EnerGuide program.

Following the writing of the 2006 Annual Report there were no further activities on the EnerGuide for Houses program – only minor administrative expenses.

For 2008 there is a project with a signed application for ceiling insulation improvements and the installation of heat recovery ventilators in forty townhouses for a housing co-op. We expect to report on this project in 2008 in the EnerGuide for Houses program provided the project proceeds as planned.

3.5 Residential – Information

Residential Information Based

The Information Based program has been very successful educating the public on Electricity Conservation as well as safety and the environment. In addition to North Bay Hydro customers, the public serviced by other LDC's in the surrounding area benefit from the North Bay Hydro conservation messages through the media.

This program was delivered in partnership with Greening Nipissing, a local non-profit environmental group from life to June 30, 2007. Since Greening Nipissing delivered the Water Heater Tune-up and Fridge Buy-back for the first quarter of 2007, there was some contact with the general public in an ongoing basis, but to a much lesser degree than the previous two years. This has led to several hundred contacts during 2007.

For the balance of 2007 and likely to April 30, 2008 the Information Based program will be delivered by internal staff with some support.

The following Table Three shows some of the activities delivered for the purpose of consumer education on electricity conservation initiatives:

Table Three
Summary of Consumer Education on Electricity Initiatives

Event	Number of Presentations or Description	Number of Attendees and/or Bulb or Christmas Light Exchanges
Student School Meetings	3	84
St. Andrews Church group	1	30
Eco Fair booth & panel discussion – Nipissing University/Canadore College	1	250
Nipissing First Nations panel discussion	1	20
Big Sisters Bowling	1	1000
Film presentation at Public Library	1	100
Presentation to "Fit for Life" group	1	25
Energy Management Seminar	1	24
Northgate Square Mall – display	1	200
The Capitol Centre was rented to promote a light bulb exchange. A free screening of the movie an Inconvenient Truth was promoted to attract a larger audience.	Several conservation groups attended and set up booths such as Union Gas, Tree North Bay, City of North Bay Environmental Committee and Ministry of Natural Resources.	800 people attended, 800 CFL bulbs were given out and over 1600 Incandescent were returned.
Powercost Monitors made available to our customers through the North Bay Public Library.	13 units were lent to the library	Circulated 122 times for the first 8 months – no further data available.
Earth Day with The Royal Bank	Partnered with RBC to promote Earth Day by setting up a NBH booth at the main branch.	200 CFL's were exchanged
Launch of a new "Conservation" based website	All media outlets in attendance at the launch.	500 brochures were handed out
Advertising	Newspaper and Radio Weekly Conservation Tips	Most residents of North Bay exposed to a variety messages several times.

Event	Number of Presentations or Description	Number of Attendees and/or Bulb or Christmas Light Exchanges
Project Porchlight launched at the City of North Bay	The Mayor and all media outlets were in attendance	Approximately 3,000 CFL's included in the 2007 report, balance of 17,000 will be included in the 2008 report.
Christmas Light Exchange	Light exchange held at Northgate Square	500 LED strings were given out and over 1000 Incandescent strings were returned.
Downtown Christmas Walk	Partnered with the DIA to promote Conservation and highlighted the benefit that downtown merchants would receive by doing lighting retrofits	500 LED strings were given out and over 1000 Incandescent strings were returned
Light exchange at the Skyhawks hockey game.	Held a "Carolling for Conservation" contest encouraging contestants to call in with a song they created, winner received a night in the Skybox with entertainment.	75 CFL bulbs were given out and over 100 Incandescent were returned
Final Christmas Light Exchange	Final event held at Northgate Square	200 LED strings were given out and 400 Incandescent strings were returned
Christmas Light Exchange with Housing Co-ops	Delivered the remainder of the Christmas lights to local housing co-ops	750 LED strings were given out

Of the $135,082.38 charged to the Information Based program, $5,724.00 was transferred to the Water Heater Tune-up and Fridge Buy-back programs. This amount is the estimated amount that supports the Fridge Buy-back program as per the note in section 3 of the requirements for *Annual Reporting of Conservation and Demand Management ("CDM") Initiatives*.

The remaining $129,358.38 is included in the TRC analysis as described below. Of this approximately $60,000 was spent on strings of LED Christmas lights, CFL bulbs, marketing and labour costs. The remaining costs were for the power monitors, conservation website, newspaper and conservation tips, Greening Nipissing and various consultants.

There is a TRC Benefit in this program due to the following during 2007: 1) there were 4,000 CFL's given to North Bay Hydro customers which are assumed to replace 4,000 incandescent bulbs and a further 800 incandescent bulbs removed from service; and 2)

there were 2,000 LED Christmas Light strings given to North Bay Hydro customers which are assumed to replace 2,000 strings with incandescent bulbs and a further 1,225 strings with incandescent bulbs removed from service. It is assumed that all CFL's were used in residences. Other give a ways are included in the cost but have been ignored in the benefit, as they are not considered material and are mainly a promotion cost.

The components of the light exchanges for the Information Based program are numbers 16 [60 Watt Incandescent to CFL Screw-in 15 Watt] and 22 [5 WATT Christmas lights C-7(25 lights) to LED Christmas Lights (indoor or outdoor)] of the OEB Tables in the Residential Worksheet.

This section is summarized in Appendix B Information Based.

3.6 Demand Reduction – Commercial

Demand Reduction – Commercial (Reference Worksheet "Appendix D Commercial")

Lighting
The lighting portion and LED Exit lighting as described in section 3.1 above are included in numbers 1 to 31 and 32 to 34 respectively of Appendix D Commercial. LED lighting is separated primarily because of the lengthy equipment life of 220,000 hours from other lighting applications. The load profile is the same for both proxies. The proxy for the commercial lighting load profile is number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables. The proxy for the load profile for any LED Exit Lighting is number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables.

Lighting in hotel rooms are included in numbers 3 to 5 of Appendix D Residential-Optional. The load profile differs from the above paragraph as it is a residential application. The proxy for this commercial project load profile is number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables.

Roof Top
A customer replaced an old unit with a new roof top. The existing had a SEER rating of 9.5 while the new one is 13.45. The base case is 10 SEER as nothing less than 10 is available. The difference in cost provided by the supplier is $1,660.00 for the higher efficient model of 13.45. The TRC test was based on the improvement from 10 SEER to 13.45 SEER. The difference in energy savings between SEER 9.5 and SEER 13.45 is 28% as per Tempstar material. There is a reduction of energy usage from the base case (SEER 10) to SEER 13.45 from 28% to 23%.

The calculated kWh savings, base case and existing assume an average of daily use of 12 hours per day all year long. The kW provided for the new roof tops were calculated as 3.4+1.5*.746+.74 kW resulting in an annual energy usage of 23,064 kWh. The savings were calculated at 6,080 kWh and a winter peak kW of 1.57 kW from the base case.

The proxy used for calculating the summer peak kW and load profile was number 24 [roof top with no economizer to a roof top with an outside air economizer] from the Commercial Worksheet on the OEB Tables.

Chillers
There were no Chillers installed in 2007.

Occupancy Sensors and Dimmer Switches
There were no Occupancy Sensors and Dimmer Switches installed in 2007.

Photocell
There were no Photocells installed in 2007.

3.7 Demand Reduction – Industrial

Demand Reduction – Industrial (Reference Worksheet "Appendix D Industrial")

Lighting
The lighting portion and LED Exit lighting as described in section 3.1 above are included in numbers 1 to 46 and 47 respectively of Appendix D Industrial. LED Exit lighting is separated primarily because of the lengthy equipment life of 220,000 hours from other lighting applications. The load profile is the same for both proxies. The proxy for the industrial lighting load profile is number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Industrial Worksheet on the OEB Tables. The proxy for the load profile for any LED Exit lighting is number 8 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Industrial Worksheet on the OEB Tables.

Zone Control
There were no zone controls installed in 2007.

Occupancy Sensors and Dimmer Switches

For information related to the proxy refer to section 3.1 above under the heading Occupancy Sensors and Dimmer Switches. During 2007 there were 102 occupancy sensors installed controlling 494 fixtures with a total controlled wattage of 25,491. There were no dimmer switches installed. The total actual cost of the installed control systems was $21,411.00 or $209.91 per sensor. This translates into $43.44 per fixture and $0.84 per watt controlled.

The proxy for the industrial occupancy sensors load profile is number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the Commercial Worksheet on the OEB Tables. This proxy is used load profile, peak kW savings, equipment life and energy savings as explained below. The proxy was not used for cost as actual costs were available.

Approximately half the load prior to the installation of the sensors operated 8760 hours per year as per items 48 to 57 except 49 and 55 in Appendix D Industrial. The remaining items 49, 55 and 58 operated an average of about 3000 hours per year.

For all sensors from items 48 to 58 except 50, 51 and 56 the energy savings were estimated at 30% as per proxy. For items 50 and 51 the energy savings were estimated at over 80%, a very significant gain. For item 56 the energy savings were estimated at over 70%. These percentage differences are based on actual usage of the lights in different locations.

3.8 Demand Reduction – Institutional

Demand Reduction – Institutional (Reference Worksheet "Appendix D Institutional")

Institutional customers include schools, hospitals, non-profit housing, and public buildings such as the City, airport commissions, theatres, arenas, libraries and the "Y".

Lighting

The lighting portion and LED Exit lighting as described in section 3.1 above are included in numbers 1 to 47 and 48 to 49 respectively of Appendix D Institutional. LED Exit lighting is separated primarily because of the lengthy equipment life of 220,000 hours from other lighting applications. The load profile is the same for both proxies. The proxy for the institutional lighting load profile is number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables. The proxy for the load profile for any LED Exit lighting is number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables.

Lighting in suites, bedrooms and the like are included in numbers 6 to 17 of Appendix D Residential-Optional. The load profile differs from the above paragraph as it is a residential application. The proxy for this commercial project load profile is number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables.

Occupancy Sensors and Dimmer Switches

For information related to the proxy refer to section 3.1 above under the heading Occupancy Sensors and Dimmer Switches. During 2007 one customer installed 13 occupancy sensors controlling 3,120 watts. There were no dimmer switches installed. The total actual cost of the installed control systems was $1,122.68 or $86.36 per sensor.

The proxy for the institutional occupancy sensors load profile is number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the Commercial Worksheet on the OEB Tables. This proxy is used load profile, peak kW savings, equipment life and energy savings as explained below. The proxy was not used for cost as actual costs were available.

The energy savings for occupancy sensors is only about 0.2% of the total institutional kWh savings. These lights operated at 3,120 hours per year before the occupancy sensor was installed and was reduced by 30% as per item 52 in Appendix D Institutional.

Photocell

For information related to the proxy refer to section 3.1 above under the heading Photocell. It describes how the load profile and summer and winter peak kW are calculated. During 2007 one customer installed 12 high pressure sodium (HPS) lights with photocells at an actual cost of $273.22 each.

The proxies for the institutional photocell were other control mechanisms such as 16, 17 and 18 of the Commercial Worksheet on the OEB Tables which were all at 10 years and 10% free ridership.

The energy savings for the Photocells is only about 0.3% of the total institutional kWh savings. These lights operated like street lights at 8760 hours without a photocell and 4380 hours with a photocell as per item 53 in Appendix D Institutional.

Thermal Envelope Improvements

One customer requested assistance on improving the energy efficiency of new houses planned to be constructed the next year. The original plan was to construct the townhouses as per building code. The agreed-to approach was to conduct a heat loss based on the building code requirements and conduct a second heat loss based on the more efficient construction. The difference in the two values is the thermal energy efficiency improvement. The same approach was used to calculate the incremental cost. An estimate was prepared based on the building code and a second for the energy efficient thermal envelope. The difference was used as the incremental cost.

Since the townhouses were residences, the proxy used for the load profile, peak kW, equipment life, free ridership was number 39 [Average existing stock to Attic Insulation (R-11 to R-38)] of the Residential Worksheet on the OEB Tables. Any of numbers 36 to 45 on the Residential Worksheet could have been uses as they all have the same load profile, peak kW, equipment life and free ridership.

Number 18 of Appendix D Residential-Optional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

Appliances

Each townhouse unit was to be provided a standard refrigerator, clothes washer and dryer and a standard range/oven. It was determined to install an energy star refrigerator, a high efficiency clothes washer/dryer and a high efficient range/oven. All components of the OEB Tables were used for the energy star refrigerator and a high efficient range/oven. However the high efficiency clothes washer/dryer was not in the OEB Tables. As a result

the average of two proxies was used to calculate all components: number 5 [Current standard for clothes dryer to High Efficiency Clothes Dryer] and number 12 [Current standard for clothes washer to Energy Star Front Loading Clothes Washer].

Number 21 of Appendix D Residential-Optional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

Heating and Air Conditioning

For each townhouse the original plan was to install window air conditioners and electric baseboards in each of the units. It was agreed that the building designers would calculate the energy usage and cost to install as per original plan and make another calculation for both energy usage and cost to supply and install an energy star air source heat pump. The difference in energy usage is the energy saving and the difference in cost is the incremental cost. Since there is no energy star air source heat pump for both heating and cooling on the OEB Tables, the sum of two proxies was used to establish the peak kW and load profile: number 54 [Current standard for central air conditioner to Energy Star Central Air Conditioner] and number 57 [Average existing stock to Energy Star Air Source Heat Pump].

Number 20 of Appendix D Residential-Optional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

Programmable Thermostats

Similar to thermal envelope and heating/air conditioning, the customer was going to install a standard thermostat, but agreed to install programmable thermostats in each unit. Using the estimated energy usage with the energy star air source heat pump installed the base energy was known. As per the proxy, the energy reduction was 8.1%. The proxy used only differs because of the base energy usage is slightly higher and the estimated incremental costs by the designer is more than double the proxy. For consistency all energy and cost data estimated by the designer was used. The proxy used to establish the peak kW, load profile, equipment life and free ridership is number 59 [Average existing stock to Programmable Thermostat (space heating and cooling)] from the Residential worksheet.

Number 19 of Appendix D Residential-Optional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

A second customer installed programmable thermostats with some changes from the former customer. The base energy calculation used actual energy usage assuming 50% of the usage was for heating and cooling. The other difference was that incremental costs based on actual were used in the calculation. The same proxy number 59 as per former customer was used.

Number 54 of Appendix D Institutional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

Roof Tops
There were no roof tops installed in 2007.

Electric Heaters with no Control
There were no electric heaters with no controls installed in 2007.

Parking Lot Controllers
The Intelligent Parking Lot Controllers (IPLC) was supplied by IPLC/Vantera Incorporated who provided some research data from Manitoba Hydro. The saving measured and calculated amounted to 1,345 kWh per controller per year. This included some percentage of in-car heaters. Based on other input from IPLC/Vantera Incorporated the savings were calculated at 1,269 kWh per controller per year. The lower quantity of 1,269 kWh was selected assuming less in-car heaters. Based on a diversity factor of 50% provided by IPLC/Vantera Incorporated, each controller saved 0.225 kW for winter peak kW. IPLC/Vantera Incorporated also provided an estimated equipment life of 25 years. The customer provided the actual costs for the controllers.

The proxy used for the load profile, peak kW, equipment life, free ridership was number 39 [Average existing stock to Attic Insulation (R-11 to R-38)] of the Residential Worksheet on the OEB Tables. Any of numbers 36 to 45 on the Residential Worksheet could have been uses as they all have the same load profile, peak kW, equipment life and free ridership.

Number 50 of Appendix D Institutional shows the load profile, peak kW, existing energy, base energy, efficient energy, equipment life, incremental cost and free ridership.

Heating, Ventilation and Air Conditioning Controls
An exhaust fan was operating continuously and an electric baseboard heater operating immediately below the exhaust fan resulting in the continual waste of heat. To remedy a new intake damper was installed together with new thermostat and controls to operate one electric baseboard heater depending on set points. Relocate thermostat and install interlock. A consultant did a detailed study on the buildings. The results for energy savings kWh, peak kW and costs were used from that study.

The proxy used for the load profile and free ridership is number 39 [Average existing stock to Attic Insulation (R-11 to R-38)] of the Residential Worksheet on the OEB Tables. Any of numbers 36 to 45 on the Residential Worksheet could have been uses as they all have the same load profile, equipment life and free ridership.

The proxy used for equipment life is number 26 [Fixed Head Pressure to Floating Head Pressure Control] of the Commercial Worksheet on the OEB Tables. There are proxies that could be used with similar equipment life such as 28 and a second 26 on the Commercial Worksheet.

Number 51 of Appendix D Institutional shows the load profile, peak kW, efficient energy, equipment life, incremental cost and free ridership.

Operating Efficiency of a New Configuration of Motors

An audit report for a customer was completed February 24, 2006 and equipment ordered April 2006 with work completed August 2006. Much of the analysis is based on the first full year's operation and compared to the actual billing for 2005 when the older inefficient motors operated for a full year.

The customer had three large (200 Hp, 150 HP and 50 HP) inefficient motors installed with little flexibility in operation. These motors were replaced with 6 efficient smaller 40 HP motors resulting in a large reduction in energy usage. The existing year usage (2005) is increased by 22.5% to increase dissolved oxygen by 20% to speed up the digestion process. This addition is referred to as the base case since the past 12 months billing includes this usage. Any other equipment changes are ignored with this approach as they are not material.

This decreased the energy usage for the motors from the base case of 1,194,489 to 801,383 kWh, a decrease of 393,106. The motor efficiency improvement accounted for 173,410 kWh and the 22.5% to increase dissolved oxygen by 20% to speed up the digestion process accounted for 219,396 for the total of 393,106 kWh.

The principles described in for Seasonal Energy Usage described in section 3.1 are used to calculate peak kW demands and kWh by season. For the winter and summer peak kW, the kW savings are calculated month by month and averaged over each of the 4 seasonal months to arrive at the winter and summer peak kW. A similar calculation is used to separate the kWh by season and then estimate the number of hour's usage for each of peak, off peak and mid peak for summer and winter as well as off peak and mid peak for the shoulder months. This creates the load profile.

The incremental cost for the high efficient motors and operating flexibility is estimated at 1/3 of the full actual cost. The actual cost for material was $145,363.78 and internal labour estimated at $11,200.00.

Equipment life is expected to be 15 years which is similar to other motors such as proxies 26 and 28 of the Commercial Worksheet. Free riders are 10% as is the case with other motors.

Number 55 of Appendix D Institutional shows the load profile, peak kW, base case energy, efficient energy, equipment life, incremental cost and free ridership.

3.9 System Optimization Study

The purpose of this project is to improve the reliability and efficiency on the North Bay Hydro distribution system. System wide optimization and balance will minimize line loss. The technical information has been gathered and entered into a computerized model.

As per the 2006 Annual Report the technical data gathered and input into the model is for the 44 kV, 22 kV, 12 kV and 4 kV distribution systems. This includes the field gathering of wire sizes and the verification of switching information. Data editing and verification was completed. Loads have been assigned based on the transformer data.

The CDM plan was to develop a strategic plan to reduce demand and energy savings. The expectation in the CDM plan was to include any savings from this initiative in the CDM plan results. However during 2007 it was determined there would be no further action on this initiative. There were no further costs charged to this initiative during 2007. This was a very worthwhile long term project that provides a roadmap for future work to minimize system losses by optimizing the distribution system.

All costs were included in the 2006 Annual Report including TRC Costs. In this 2007 Annual Report these costs are shown as both a Utility Direct Cost and TRC Cost. Since the expenses for this project were for study purposes only with no expected energy savings during the life of the CDM plan, the TRC Costs reported in 2006 were likely unnecessary.

3.10 Optional Programs – Street Light Pilot

This pilot project is a lighting retrofit of 185 watt HPS lights including ballast with light harvester and ballast involving lab testing and handling.

As reported in the 2006 Annual Report there were approximately 16 lights installed. Some or all of these lights had been installed and removed at various times, which inflated the cost to unreasonable levels. There had been a great deal of trouble with reliability. North Bay Hydro worked with the manufacturer on problems with the light harvester. Moisture infiltrated through the opening for the light harvester causing the ballast to short. The solution required would include proper sealing around the light harvester or no using the light harvester. North Bay Hydro spent a great deal of time on this CDM initiative and decided not to proceed.

There was also some investigative work done under Optional Programs to develop a program for Sentinel Lights which had merit, but sufficient resources were not available to proceed. It was also quite complex due to the fact the owner would likely pay the cost of the change and the customer served by the owner would benefit from a lower electricity bill.

3.11 Optional Programs – LED Traffic Lights

Optional Program LED Traffic Lights – (Reference Worksheet "Appendix D Residential-Optional")

The LED Traffic Lights are included in numbers 26 to 33 of Appendix D Residential-Optional. The proxy is number 10 [2 - 15W (30W) Incandescent EXIT Sign to 3W LED EXIT sign] of the Commercial Worksheet on the OEB Tables. This proxy is used for load profile, winter and summer peak kW as well as free ridership.

The operating time for red, amber, green, green arrows and pedestrian lights all vary, but operate each and every day of the year. It was estimated on average that both the incandescent LED red and green lights operate 4000 hours per year and the amber lights 760 hours per year for a total 8760 hours. The green arrow LED lights and incandescent flashing green are both estimated at 430 hours each. The pedestrian LED lights and incandescent lights operate 8760 hours per year. The incandescent lights had two heads each operating 50% of the time whereas the one LED head operates 100% of the time.

The LED Exit lighting had an equipment life of 220,000 hours. This equipment life was considered too lengthy for LED Traffic Lights as a proxy, thus the seven year warranty period for the lights of 61,320 hours was selected. The calculation as described in section 3.1 was used for determining the winter and summer peak kW to recognized the difference in operating time for the various LED lights. The costs were based on invoiced costs for materials and a combination of invoiced costs and estimates based on proration from actual invoiced amounts for labour.

3.12 Optional Programs – Electrical Thermal Storage Heater

This was a demonstration project as per the 2006 Annual Report to test how an Electrical Thermal Storage Heater (ETS) will function in a building in North Bay. It could be used to demonstrate technical and energy saving advantages. It works very well but generated little interest.

There was no further activity on this project during 2007 and nothing expected during 2008.

3.13 Renewable Energy Opportunities

As per the 2006 Annual Report a good opportunity was underway with the City of North Bay to obtain funding for a study to determine the landfill gas feasibility which would save electrical energy as per North Bay Hydro's CDM plan. Funding was approved for the feasibility study and an advance of $44,941.22 paid to the City of North Bay during 2007 with a second payment expected during 2008. This program started in 2006 with an expected completion date for the end of 2007, but now completion is expected during 2008.

The savings for this landfill project are projected to be about 1,600 kW peak demand and 8,800,000 kWh annually. Once the project is completed North Bay Hydro will evaluate the project further to determine if it satisfies all requirements and if so include in the 2008 Annual Report as appropriate.

For this 2007 Annual Report the $44,941.22 is reported only as a Utility Direct Cost, not as a TRC Cost. If there is a TRC Benefit reported in 2008, the TRC Cost for 2007 will be included with the TRC Cost for 2008.

A Solar PV Project was identified with the City of North Bay near the end of 2007 which will proceed in early 2008 and will be reported in the 2008 Annual Report. North Bay Hydro has committed some funding for this project for 2008.

4.0 Lessons Learned

Following is a summary of the lessons learned during 2007 with respect to developing, implementing and measuring the results. In addition there are further comments on what was submitted in the 2005 and 2006 Annual Reports as they pertain to 2007 whether more successful, less successful or the same.

- There continued to be a very strong customer response to the Water Heater Tune-up and Fridge Buy-back programs and both are considered a success. These programs had surpassed targets under budget at the end of 2006. Follow up with customers indicated a high degree of satisfaction with the services provided. As a result there were more units accomplished for both the Water Heater Tune-up and Fridge Buy-back programs during the first half of 2007. Many completed during 2007 were in institutional buildings such as housing co-ops. Including the 2007 activity, many more units in total were completed than planned, still under budget. An incentive was not required for the Water Heater Tune-up program to attract customer interest. There was no cost to the customers who received free CFL bulbs, showerhead and faucet aerators. An incentive was used to attract interest in the Fridge Buy-back program, which appeared to increase interest although no survey was done in this regard. These two programs were both considered highly successful and were completed June 2007.
- The agreement structured with a local environmental group, Greening Nipissing to deliver the residential programs proved an effective means of presenting residential programs to customers from 2005 to March 2007. There was a real advantage having one group delivering several programs to the same class of customers (residential). While at a residence to wrap a water heater, other opportunities are identified such as the disposal of a second fridge or an opportunity arises to discuss the advantages of more efficient lighting. This delivery methodology has proven very successful for Water Heater Tune-up, Fridge Buy-back and Information Based programs until the end of the first quarter of 2007 when a key individual left Greening Nipissing.
- Initially the EnerGuide for Houses program relied heavily on Natural Resources Canada who cancelled their program causing a large negative impact on the North

Bay Hydro EnerGuide for Houses program. As per the 2006 Annual report which suggested this program may be discontinued, this CDM program had no activity during 2007. However in 2008, there may be some successes reported for improvements in attic insulation and the installation of heat recovery ventilators for a housing co-op. More focus was placed on the Information Based program in 2007 and even more will be in 2008 to educate the public which are gaining interest.

- With regard to Information Based programs a large number of activities took place during 2007 as per Table Three in section 3.5. This program is important to promote all CDM programs increasing awareness to stimulate participation in existing programs or offering input on other potential programs or pilots. Most of the focus has been on residential customers. Table Three shows a significant number of contacts and various CFL light bulb and Christmas Light exchanges. Nearly all these functions were well attended except for a hockey game due to bad weather. The numbers of participants at presentations, open house, trade shows, etc. are fairly easy to tabulate. However audiences of newspaper articles, advertising, TV shows and radio are difficult to assess. This program was very successful in the residential market during 2007 and is expected to continue gaining momentum during 2008.
- Most success with larger customers has occurred through word of mouth. Some advertising occurred along with a large number of direct contacts to generate interest in conservation, incentives and saving money.
- Incentives were a very good tool to promote energy conservation. Without incentives it is highly unlikely our success in obtaining necessary information for reporting purposes or for obtaining signed agreements. The idea of incentives generated a lot of interest, communication among customers and assisted greatly with the customer upfront financial cost for energy efficiency installations. It provided a means for North Bay Hydro to follow projects, tabulate results and make TRC calculations. It was a wonderful tool to obtain the necessary information tabulating peak kW demand, energy savings and load profile.
- During most of the year there was excellent participation in most programs. A great deal of momentum was lost when it appeared the programs were going to end on September 30, 2007. This demonstrated the need to continually promote conservation so that it does not lose momentum -- the public needs consistency. The industry has changed direction too many times in the past from sales to marketing to conserve that most will sit back and wait to see if the direction will continue. That occurs for both those delivering and those receiving programs.
- There was excellent participation in Demand Reduction programs when targeted at commercial, industrial and institutional customers. This occurs as a result of pushing deadlines to obtain signatures on agreements and/or to finish a project. Various consultants and contractors sell energy conservation programs to many of their clients when involved with audits, design of new systems or buildings, installing equipment or any other activity. Industry groups such as non-profit housing, motels and hotels discuss the concepts resulting in considerable interest and applications for incentives. An important resource during 2007 was the lighting specialists selling their products. These specialists provided excellent

- The North Bay Hydro program to fund audits has helped stimulate interest and participation. During 2006 this approach changed to having the customer pay half, which is refunded if they proceed with the project. This gained more momentum during 2007. In this way the customer is more committed as opposed to just receiving a free service which often resulted in no energy efficient initiatives. This is an excellent approach and should continue for future initiates.
- Customers participating in the Demand Reduction program appreciate the simple programs with streamlined processes and agreements. North Bay Hydro has been very successful in this area ensuring processes and agreements are effective, yet involve a minimum amount of paperwork and bureaucracy. This also simplifies the North Bay Hydro workload as utilities often need to do much of the preparation of applications and agreements or the customer will quickly lose interest. North Bay Hydro continued to prepare most of the paper work for agreements executed during 2007 as they did in 2006.
- As per the 2005 Annual Report, a lighting program was designed and planned for implementation in early 2006. This program provided a quick approach to prepare the necessary paper work, calculate incentive amount and calculate potential billing savings based on numbers, type and wattage of existing and new lights. The program was designed for changes like for like. The lighting program provides an incentive on a per fixture basis for energy efficient lighting technologies. To the end of 2006, the program had not proven as successful as thought, but still beneficial. During 2007 it was found this program was more suitable to smaller customers. There were seven of these projects completed in 2007 and many more scheduled for completion in 2008.
- Experience has indicated that the time from preparing an agreement and execution of that agreement can take from one week up to one year. Also once executed the actual work to complete the project and be verified by North Bay Hydro has taken from a few weeks to over a year. This is one reason why at yearend there were 31 projects completed during 2007 and another 73 at various stages of completion. The number of active projects did not change from year end 2006 to year end 2007. More continual contact with the customers and the fact the deadline to execute an agreement was set at December 31, 2007 with program scheduled to end April 30, 2008 all helped facilitate the process through 2007. The 73 active projects are decreasing steadily during 2008. It is necessary to have a program such as Demand Reduction last for at least three years with various milestones to maximize results.
- In the 2005 Annual Report, it was stated the LED Traffic Light pilot was deemed a success and the program was expanded with the objective of having all major intersections in the City converted to LED technology by late 2007. In addition to the pilot, 37 intersections were completed during 2006 and 2007. Four more remain for completion during 2008. The LED Traffic Light program is a high profile project to the public with better quality lighting and 92.5% energy savings.

- In the 2006 Annual Report, it was reported the Street Lighting pilot had encountered some difficulties with respect to waterproof fixtures. North Bay Hydro worked with suppliers/manufacturers to rectify the problem. For this reason and others this program had no further activity during 2007 and none expected related to the CDM plan for 2008. This could be still considered a future initiative outside the Third Tranche as it raises the profile of energy efficiency with the residents of North Bay.

5.0 Conclusions

North Bay Hydro initiatives during 2007 have satisfied most if not all principles in the CDM plan. The activities have included all classes of customers including non-profit housing, institutions, commercial, industrial, residential, seniors, tenants and the City of North Bay. The acceptance from all groups has been exceptional.

Allies such as consultants, contractors, local experts, distributors and suppliers have all worked with us to deliver programs and educate the public on energy conservation.

School and public presentations, radio and newspaper advertising, radio and TV information pieces, displays, newspaper articles, billing stuffers, panel discussions at Nipissing University and Nipissing First Nations, energy management seminar, presentations at public library and "Fit for Life" group as well as special events such as Big Sisters and church groups were all well accepted by the people of North Bay.

There were several incandescent bulb and CFL exchanges at various events such as: a free screening of a movie at the Capitol Centre; Earth Day at the Royal Bank; and at a hockey game involving such groups as: the general public; Union Gas; Tree North Bay; City of North Bay Environmental Committee; and Ministry of Natural Resources. For these initiatives 1,075 CFL's were handed out and 1,900 incandescent bulbs returned.

There were several Christmas Light Exchanges where 2,400 incandescent strings were returned and 1,950 LED strings handed out at four separate events.

Other events that took place very successfully were the lending of powercost monitors made available at the Public Library and the launching of conservation based website. Project Porchlight was launched with all media in attendance to begin the delivery of 20,000 CFL's.

The partnership with Greening Nipissing ended in March 2007 after delivering successful residential programs resulting in very positive results against the CDM plan. Residential programs changed focus very successfully for the last nine months of 2007 to Information Based programs as per this Annual Report for the Water Heater Tune-up, Refrigerator Buy-back and EnerGuide for Houses programs. Both the Water Heater Tune-up and Refrigerator Buy-back programs exceeded the planned targets of the CDM plan substantially during 2006 and 2007 and came in under budget. There was no activity on EnerGuide for Houses program in 2007.

Up to the end of 2007, all Optional CDM programs identified in the CDM plan were either launched or investigated for program acceptance except one optional program, Domestic Hot Water Load Control. This Optional Program may be investigated under a separate initiative. Sentinel Light replacement was investigated but not implemented due the lack of resources and possibly the fact one party gained from efficiency improvement while another party benefitted from lower bills. The Street Lighting pilot, Thermal Energy Storage and the distribution System Optimization Study had no further activity related to the CDM plan. No activities occurred during 2007 for various reasons such as technical difficulties, timeliness, available resources and technology screening analysis. LED Traffic Lights were a resounding success – all but four intersections completed prior to the end of 2007.

The Demand Reduction program for commercial, institutions and industrial establishments was very active during 2007 and will remain at least as active until the programs concludes. In addition to the 31 projects completed in 2007 there are another 73 active, many that are completed at the time this Annual Report is submitted. Success in these programs will continue into to the end of the CDM Third Tranche funding.

The payment of incentives to customers proved very successful as per previous section 4. When the CDM plan was developed it was thought most of the energy efficient gains would be from the 25 largest commercial, industrial and institutional customers. Since the majority of energy efficient gains were from lighting retrofits, the size of customer was less important. Our successes were more mid range from many more customers than planned. This was a real advantage as far more customers were involved resulting in much better public energy efficient education than expected. The energy savings and payment of incentives was less than planned due to our success with small customers.

The incentive plan was consistent from customer to customer because the methodology with few exceptions was based on Peak kW Demand for both summer and winter as calculated in conjunction with the TRC calculations. For Demand Reduction and Optional programs the total budget for incentives was $400,000. During 2007 $149,879 was paid bringing the total to $194,035 life to date. The only other program with a budget for incentives was the Fridge Buy-back program with a budget of $15,000 ($50.00 per fridge for 300 fridges). The actual amount paid in 2007 was $2,550.00 bringing the life to date total to $22,600.00. The over expenditure of the incentive was due to the success of the program where 492 fridges were picked up. All customers did not want the incentive.

During 2007 there was a great deal of focus on City of North Bay projects resulting in energy savings of 1,090,663 kWh with more expected for completion during 2008. The City of North Bay projects result in a lot of highly visible public exposure for such locations as City Hall, traffic lights, recreation facilities and theatres where most if not all like what they see. We may use this as an opportunity to communicate North Bay Hydro's commitment to Energy Conservation and our CDM plan during 2008.

The Benefit to Cost Ratio for all programs during 2007 was 2.10 with a positive net TRC value of $976,657. This ratio increased during 2007 as per speculated in the 2006 Annual Report. For 2008, the ratio may increase further as more projects are completed. Individually, residential, commercial, institutional, industrial and optional programs all had a positive net TRC with Demand Reduction-Institutional representing 56% of the overall net TRC of $976,657.

The energy savings accomplished during 2007 represent more than 53% of the total life to date. Below is Table Four showing the results for 2007 and life to date savings with percentage of the 2007 performance compared to the Total Life to Date:

Table Four
Compare 2007 to Life to Date (LTD) Results

	Total for 2007	**Life to Date (LTD)**	**% 2007 of LTD**
Net TRC Cost	$976,657	$1,577,988	61.89
Annual kWh Savings	3,556,630	5,880,196	60.48
Lifecycle kWh Savings	33,394,594	56,236,978	59.38
Peak kW Saved	754	1,406	53.63
Cost per kW Saved	$571.12	$684.62	N/A
Gross CDM Costs	$430,874	$962,876	44.75
Percent of $1,275,000 Budget Spent	33.79	75.52	N/A

For all activities related to CDM, our brand “Saving Together” continues to be very central to our marketing activities related to CDM and other North Bay Hydro endeavours.

If there are any questions please contact the undersigned at 705-474-8100.

Yours truly,

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Todd Wilcox

Appendix A - Evaluation of the CDM Plan

Highlighted boxes are to be completed manually, white boxes are linked to Appendix C and will be brought forward automatically.

	[5] Cumulative Totals Life-to-date	Total for 2007	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System Optimization	[4] Smart Meters	Optional	Renewable Energy
Net TRC value ($):	**$ 1,577,988**	**$ 976,657**	**$ 136,824**	**$ 81,836**	**$ 548,347**	**$ 104,118**	**$ -**	**$ -**		**$ 105,532**	**$ -**
Benefit to cost ratio:	**2.01**	2.10	1.96	3.02	2.50	1.60	0.00	0.00		1.65	0.00
Number of participants or units delivered:	**32,086**	23,948	11,640	1,806	7,718	1,697				1,087	0
Lifecycle (kWh) Savings:	**56,236,978**	33,394,594	5,128,379	2,052,119	17,531,613	4,155,095	0	0		4,527,388	0
Report Year Total kWh saved (kWh):	**5,880,196**	3,556,630	724,575	363,249	1,438,051	639,731	0	0		391,024	0
Total peak demand saved (kW):	**1,409**	757	168	64	372	108	0	0		45	0
Total kWh saved as a percentage of total kWh delivered (%):	**0.98%**	0.63%	0.13%	0.06%	0.26%	0.11%		0.00%		0.07%	0.00%
Peak kW saved as a percentage of LDC peak kW load (%):	***N/A***	0.67%	0.15%	0.06%	0.33%	0.10%		0.00%		0.04%	0.00%
[1] *Report Year Gross CDM expenditures ($):*	**$ 962,876**	$ 430,874	$ 146,759	$ 15,763	$ 165,761	$ 32,617	$ -	$ -	$ -	$ 25,033	$ 44,941
[2] *Expenditures per lifecycle KWh saved ($/kWh):*	**$ 0.02**	$ 0.01	$ 0.03	$ 0.01	$ 0.01	$ 0.01	$ -	$ -		$ 0.01	$ -
[3] *Expenditures per KW saved ($/kW):*	**$ 683.53**	$ 569.43	$ 873.90	$ 246.66	$ 445.56	$ 301.55	$ -	$ -		$ 560.81	$ -

Utility discount rate (%):	**6.097%**

[1] Expenditures are reported on accrual basis.
[2] Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
[3] Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.
[4] Please report spending related to 3rd tranche of MARR funding only. TRC calculations are not required for Smart Meters. Only actual expenditures for the year need to be reported.
[5] Includes total for the reporting year, plus prior year, if any (for example, 2006 CDM Annual report for third tranche will include 2005 and 2004 numbers, if any.

Comments

1) Information Based Program (Consumer Education) is included in the Net TRC or Benefit to Cost Ratio as there are measurable results for promotional handouts such as CFL's and LED Christmas Lights which are assumed installed by the customer.

2) Units are selected as opposed to participants to cover actual numbers of installations.

3)Total Peak Demand (kW) is the higher of summer or winter peak.

4) Gross CDM expenditures for 2005 included expenditures by both the customer and North Bay Hydro. For 2006 and 2007 the participant costs are excluded. The participant costs totalled $32,132.45 in 2005. These costs have been excluded from the Cumulative Life to date Gross CDM expenditures.

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Water Heater Tune-up -- Residential

Description of the program (including intent, design, delivery, partnerships and evaluation):

Installation of insulating blanket, low flow showerhead, faucet aerators, hot water pipe wrap, compact fluorescents and outlet insulators in residential dwellings with electric domestic hot water heating. Program also includes details on how to save electricity throughout the home. Program was delivered in partnership with Greening Nipissing, a local non profit environmental group as well as a local contractor. The program was completed under budget by the end of June 2007 with the number of planned tanks of 300 surpassed by 208.

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5
Base case technology:	No Tank Wrap	No Aerator	Regular Showerhead	No Pipe Wrap	Incandescent Bulb
Efficient technology:	Tank Wrap	Install aerator	Efficient Showerhead	Pipe Wrap	CFL
Number of participants or units delivered for reporting year:	110	41	78	108	207
Measure life (years):	6	12	12	6	4.31
Number of Participants or units delivered life to date	448	416	315	587	1320

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 60,583.50*	$328,313.05
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 3,120.98	$ 51,060.09
Incremental Measure Costs (Equipment Costs)	$ 3,578.04	$20,756.79
Total TRC costs:	$ 6,699.02	$ 71,816.88
Net TRC (in year CDN $):	$ 53,884.48	$ 256,496.17
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	9.04	4.57

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	5.85	25.12
	Winter	19.32	151.20

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*857,649*	103,842	5,593,935	591,884
Other resources saved :				
Natural Gas (m3):				
Other Water:	26,693,148	2,224,429	66,810,726	5,572,572

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ 10,360.31	$ 24,649.31
	Incremental O&M:	-$ 3,263.73	$ 49,473.88
	Incentive:	$ -	$ -
	Total:	$ 7,096.58	$ 74,123.19
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The Water Heater Tune-up program is further described in section 3.2. All measures are included in the OEB Tables except for outlet insulators. This program includes two measures not directly related to the Water Heater Tune-up but are to the energy efficiency of the dwelling: up to two compact fluorescent bulbs and one or two outlet insulators were installed by Greening Nipissing. Indirect costs are included with the utility direct costs. All labour and material are provided by North Bay Hydro. This is a highly successful program where more units than planned were accomplished under budget. This program was extended to the end of the second quarter of 2007. As noted in the 2006 Annual Report, Weather-stripping was included in the 2005 Annual Report but was not part of the program and the water savings were understated in the 2005 Annual Report. The cumulative results have not been adjusted to reflect these over and under reporting's.

During the home visits the customer receives handouts and is encouraged to participate in Energy Efficiency discussions. For these purposes and others, $12,518.61 was transferred in 2006 and a further $2,862.00 was transferred in 2007 to this program from the Information Based Program.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Fridge Buy-Back -- Residential

Description of the program (including intent, design, delivery, partnerships and evaluation):

This program is targeted at the removal and proper disposal of a second older refrigerator found in many homes. These units are inefficient and often have leaky doors and seals. Customers are paid an incentive of $50 to encourage participation. The fridges are removed from the customers premises and refrigerant evacuated and unit properly disposed of by a licensed contractor. Program was delivered in partnership with Greening Nipissing, a local non-profit environmental group and a contractor during part of 2007 until program was completed June 30, 2007.

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5
Base case technology:	Second Operating Fridge				
Efficient technology:	Removal of Second Fridge				
Number of participants or units delivered for reporting year:	49				
Measure life (years):	6				
Number of Participants or units delivered life to date	492				

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 21,841.96*	$219,311.14
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 4,242.44	$ 27,925.01
Incremental Measure Costs (Equipment Costs)	$ 2,337.30	$23,468.40
Total TRC costs:	$ 6,579.74	$ 51,393.41
Net TRC (in year CDN $):	$ 15,262.22	$ 167,917.73
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.32	4.27

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW): *Summer*	13.34		133.95
Winter	14.10		141.53

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*590,400*	58,800	3,542,400	352,800
Other resources saved :				
Natural Gas (m3):				
Other Water:				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 6,839.44	$ 54,001.01
	Incentive:	$ 2,550.00	$ 22,600.00
	Total:	$ 9,389.44	$ 76,601.01
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

This is a highly successful program where more units than planned were accomplished under budget. The Fridge Buy-back program is further described in section 3.3. The only measure of this program is included in number 1 of the Residential Worksheet of the OEB Tables. Since the cost is less than the OEB Tables, the measure is included in number 2 of Appendix D Residential-Optional. Indirect costs are included with the utility direct costs. All labour and material are provided by North Bay Hydro. This is the only residential program with an incentive to entice the customer to take part in the program. This program was completed by the end of June 2007. During the home visits the customer receives handouts and is encouraged to participate in Energy Efficiency discussions. For these purposes and others, $16,524.57 was transferred in 2006 and a further $2,862.00 was transferred in 2007 to this program from the Information Based Program.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Energuide for Houses -- Residential

Description of the program (including intent, design, delivery, partnerships and evaluation):

This program originally included the promotion of Natural Resources Canada's Energuide for Houses to electrically heated homes in the City of North Bay. This program is delivered in partnership with Greening Nipissing, a local non profit environmental group. Greening Nipissing works closely with Green Communities Canada on these projects. During 2006 this program was stopped by Natural Resources Canada. There was no further activity on this program during 2007.

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5
Base case technology:	Prior to Implementation of EGH Improvements for All-Electric	Non-Electric Homes			
Efficient technology:	Implemented Improvements	Furnace Fan time reduced	2005 Fuel Substitution	2005 Caulking Weather-stripping	2005 Insulation Improvements
Number of participants or units delivered for reporting year:					
Measure life (years):					
Number of Participants or units delivered life to date	3	39	3	2	2

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ -	$99,333.08
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 914.30	$ 36,536.23
Incremental Measure Costs (Equipment Costs)		$31,466.20
Total TRC costs:	$ 914.30	$ 68,002.44
Net TRC (in year CDN $):	-$ 914.30	$ 31,330.64
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	0.00	1.46

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*		0.00
	Winter		86.64

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):			2,703,017	108,121
Other resources saved :				
Natural Gas (m3):				
Other Water:				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ 914.30	$ 36,536.23
	Incentive:	$ -	$ -
	Total:	$ 914.30	$ 36,536.23
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The Energuide for Houses program is further described in section 3.4. There was no activity on this program during 2007, only some minor administrative costs. The cancellation of this program by Natural Resources Canada had a large negative impact on the North Bay Hydro Energuide program. There is the possibility of including ceiling insulation improvements and heat recovery ventilators for forty townhouses in this program for 2008.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Information Based -- Residential

Description of the program (including intent, design, delivery, partnerships and evaluation):

Use of various channels including individual customer meetings, group meetings, direct mail, newspaper articles etc to increase awareness of programs and conservation opportunities. Many of the activities including numbers of activities and estimated audience size are included in section 3.5. This program was delivered mostly in partnership with Greening Nipissing, a local non-profit environmental group from the beginning of the program until March 2007. For the balance of 2007 the program was delivered mostly by internal staff. Various partnerships were established such as the Royal Bank, City Library, Project Porchlight and the Downtown Improvement Area (DIA). Many of the contacts are excluded from Appendix A as they aren't delivered units. The interest in many programs increased with time partly due to education through presentations, mass media, partnerships, website and incandescent light bulb and Christmas light string exchanges for CFL's and LED's

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4
Base case technology:	Inc bulbs	Lack of Conservation Education	Lack of Conservation Education	Lack of Conservation Education
Efficient technology:	CFL's and LED Christmas Light Exchanges with various partners	Conservation Education by Presentation, Interviews and Various Groups	Power monitors and Conservation Website	Newspaper and Conservation Tips
Number of participants or units delivered for reporting year:	8,025	1734		
Measure life (years):	6.5			
Number of Participants or units delivered life to date	8,475	136,734	0	0

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 196,870.06*	$208,502.89
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 115,758.38	$ 174,609.27
Incremental Measure Costs (Equipment Costs)	$ 12,520.00	$13,330.00
Total TRC costs:	$ 128,278.38	$ 187,939.27
Net TRC (in year CDN $):	$ 68,591.68	$ 20,563.63
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	1.53	1.11

C. **Results:** (one or more category may apply)

Conservation Programs:

			Cumulative Results:
Demand savings (kW):	*Summer*	0.00	0.00
	Winter	134.52	144.64

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*3,680,330*	561,933	3,882,830	608,913
Other resources saved :				
Natural Gas (m3):				
Other Water:				

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at beginning of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 129,358.38	$ 189,108.27
	Incentive:		
	Total:	$ 129,358.38	$ 189,108.27
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The Information Based program is further described in section 3.5. Indirect costs are included with the utility direct costs. All labour and material are provided by North Bay Hydro. This program applies somewhat to all classes of customers, but in most part is Residential. Of the $135,082.38 charged to the Information Based Program, $5,724.00 was transferred to the Water Heater Tune-up and Fridge Buy-back programs. Although this program is for education on Electricity Conservation -- some educational material is provided on safety and the environment. Customers serviced by other LDC's in the surrounding area benefit from the North Bay Hydro conservation messages through the media. There is a TRC benefit in this program due to the following during 2007: 1) there were 4,000 Compact Fluorescent Lights given to North Bay Hydro customers which are assumed to replace 4,000 incandescent bulbs and a further 800 incandescent bulbs removed from service 2007; and 2) there were 2,000 LED Christmas Light strings given to North Bay Hydro customers which are assumed to replace 2,000 strings with incandescent bulbs and a further 1,225 strings with incandescent bulbs removed from service. It is assumed that all CFL's we

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Commercial Demand Reduction

Description of the program (including intent, design, delivery, partnerships and evaluation):

An audit is performed for commercial customers by a contractor, supplier or consultant providing the necessary input to conduct a technical screening analysis. Once the components of the planned work are satisfactory to North Bay Hydro and the customer, a contract is executed with the customer. Upon completion, the results are verified by North Bay Hydro, an incentive paid to the customer, if any, and the final TRC calculations performed. Use of audits, feasibility studies and incentives are all tools to help commercial customers reduce their peak electrical energy (kWh), peak demand (kW). Delivered together with local allies including consultants, contractors, suppliers and distributors.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	T12's, Inc., MVR	No Lighting Controls	Chiller -- Dual Compressor Standard Air Conditioner
Efficient technology:	T8's, T5's, CFL's, LED's, MVR and Inc. Removals	Installed a Photocell and Motion Sensors	Single Compressor -- kW per ton reduced from 25% to 100% for various usage periods. Roof Top
Number of participants or units delivered for reporting year:	1,805	0	1
Measure life (years):	5.53	#DIV/0!	12.00
Number of Participants or units delivered life to date	4,516	5	2

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ 122,391.39	$354,044.49
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 5,890.46	$92,517.45
Incremental Measure Costs (Equipment Costs)	$ 34,665.15	$156,628.75
Total TRC costs:	$ 40,555.61	$249,146.20
Net TRC (in year CDN $):	$ 81,835.78	$104,898.29
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ 3.02	1.42

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	63.90		189.95
	Winter	69.16		185.66
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*2,052,119*	363,249	5,492,528	916,669
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ 5,890.46	$ 92,517.45
	Incentive:	$ 9,872.37	$ 32,868.94
	Total:	$ 15,762.83	$ 125,386.39
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The Assumptions for the Commercial Customers are described in sections 3.1 and 3.6. The North Bay Hydro Assumptions and Measures List is included in Appendix D in worksheet "Appendix D Commercial" and Appendix D "Residential-Optional". Appendix D "Residential-Optional" covers hotel rooms within a commercial building. the common areas of the same commercial building are included in "Appendix D Commercial". This covers all load profiles, peak kW calculations for all energy efficient installations in the commercial market. Annual Lighting savings represent about 98.1% of the savings whereas the lifecycle lighting savings represent about 96.0% of the savings. For 2007 the completed projects are nearly all lighting with one roof top installation and no control systems. The roof top is further described in section 3.6. The load profile proxy is item 24 of the Commercial worksheet. All costs are based on actual invoices where available. If not available, costs are used as provided by consultants and/or other similar projects. Indirect costs are included with the utility direct costs. The units reported in section A are units delivered, not contacts. In addition to the 11 projects completed there are 37 active projects and 42

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Institutional Demand Reduction

Description of the program (including intent, design, delivery, partnerships and evaluation):

An audit is performed for institutional customers by a contractor, supplier or consultant providing the necessary input to conduct a technical screening analysis. Once the components of the planned work are satisfactory to North Bay Hydro and the customer, a contract is executed with the customer. Upon completion, the results are verified by North Bay Hydro, an incentive paid to the customer, if any, and the final TRC calculations performed. Use of audits, feasibility studies and incentives are all tools to help institutional customers reduce their peak electrical energy (kWh), peak demand (kW). Delivered together with local allies including consultants, contractors, suppliers and distributors.

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4
Base case technology:	400 W MH, 500 W Halogen, T12's, Inc.	Old and Inefficient Electric Systems and Motors, Basic Building Standards	Uncontrolled Equipment	Building Code Standards for Thermal Envelope and Inefficient Appliances
Efficient technology:	360 W MH, 200 W Ceramic Pulse, CFL's, T8's	Convert heating to gas, install efficient fans, compressors and motors, remove wiring and heaters, install GSHP	Program. Thermostat, Motion Sensors, Photocells, Parking Lot, HVAC	Exceed Building Code Thermal Requirements and Efficient Appliances
Number of participants or units delivered for reporting year:	7,465	36	104	7,718
Measure life (years):	7.04	15.61	21.25	12.19
Number of Participants or units delivered life to date	7,616	42	105	7,718

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 914,341.12*	$1,098,764.52
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 61,943.79	$122,297.66
Incremental Measure Costs (Equipment Costs)	$ 304,049.92	$333,790.48
Total TRC costs:	$ 365,993.71	$ 456,088.14
Net TRC (in year CDN $):	$ 548,347.41	$ 642,676.39
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ 2.50	2.41

C. **Results:** (one or more category may apply)

			Cumulative Results:
Conservation Programs:			
Demand savings (kW):	*Summer*	226.11	236.45
	Winter	372.03	476.83

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*17,531,613*	1,438,051	20,522,447	1,682,824
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:		
Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		
Demand Response Programs:		
Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):				
Distribution system power factor at beginning of year (%):				
Distribution system power factor at end of year (%):				

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):				
Energy generated (kWh):				
Peak energy generated (kWh):				
Fuel type:				

Other Programs (specify):

Metric (specify):			

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ 61,943.79	$ 122,297.66
	Incentive:	$ 103,817.31	$ 110,448.75
	Total:	$ 165,761.10	$ 232,746.41
Utility indirect costs ($):	*Incremental capital:*		$ -
	Incremental O&M:		$ -
	Total:		$ -

E. Assumptions & Comments:

The Assumptions for the Institutional Customers are described in sections 3.1 and 3.8. The North Bay Hydro Assumptions and Measures List is included in Appendix D in worksheets "Appendix D Institutional" and Appendix D "Residential-Optional". "Appendix D Institutional" includes either the complete building or the common area of a building with suites. The suites are included in Appendix D "Residential-Optional". Many of the suites during 2007 had energy efficiency improvements for lighting, thermal envelope, programmable thermostats, heat pumps and appliances. Appendix D refers to the proxy or proxies where applicable that are used to make calculations for such items as load profiles, peak kW calculations, free ridership, equipment life, incremental costs, etc for all energy efficient installations in the institutional market. Annual lighting savings represent about 52% and lifecycle about 30% of the institutional savings. The other major contributor to efficiency improvements was the installation of twice as many smaller high efficiency larger inefficient motors with far more flexibility for operational control. The motor efficiency savings contributed about 27.3% and the life

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Industrial Demand Reduction

Description of the program (including intent, design, delivery, partnerships and evaluation):

An audit is performed for industrial customers by a contractor, supplier or consultant providing the necessary input to conduct a technical screening analysis. Once the components of the planned work are satisfactory to North Bay Hydro and the customer, a contract is executed with the customer. Upon completion, the results are verified by North Bay Hydro, an incentive paid to the customer, if any, and the final TRC calculations performed. Use of audits, feasibility studies and incentives are all tools to help industrial customers reduce their peak electrical energy (kWh), peak demand (kW). Delivered together with local allies including consultants, contractors, suppliers and distributors.

Measure(s):

	Measure 1	Measure 2	Measure 3
Base case technology:	Lighting T12's	No Controls	No Controls
Efficient technology:	Lighting T8's	Zone Controls	Manual Switches, Dimmer Switches, Occupancy Sensors
Number of participants or units delivered for reporting year:	1,595	0	102
Measure life (years):	6.02	0.00	10.00
Number of Participants or units delivered life to date	2,890	3	377

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 277,696.91*	$ 522,092.58
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 12,188.72	$ 60,622.95
Incremental Measure Costs (Equipment Costs)	$ 161,390.30	$ 214,761.20
Total TRC costs:	$ 173,579.02	$ 275,384.14
Net TRC (in year CDN $):	$ 104,117.90	$ 246,708.43
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ 1.60	1.90

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	101.44	153.77
	Winter	108.17	163.25

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	4,155,095	639,731	9,336,511	968,389
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):			
	lifecycle	*in year*	
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 12,188.72	$ 60,622.95
	Incentive:	$ 20,428.20	$ 34,955.72
	Total:	$ 32,616.92	$ 95,578.67
Utility indirect costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ -	$ -
	Total:	$ -	$ -

E. Assumptions & Comments:

The Assumptions for the Industrial Customers are described in sections 3.1 and 3.7. The North Bay Hydro Assumptions and Measures List is included in Appendix D in worksheet "Appendix D Industrial". This covers all load profiles, peak kW calculations for all energy efficient installations in the industrial market. Annual Lighting savings represent about 88.1% of the savings whereas the lifecycle lighting savings represent about 81.7% of the savings. The remaining savings are all a result of occupancy sensors. All seven building installed occupancy sensors resulting in savings of 75,930 kWh. Occupancy sensors are further explained in section 3.7. All costs are based on actual invoices where available. If not available, costs are used as provided by consultants and/or other similar projects. Indirect costs are included with the utility direct costs. The units reported in section A are units delivered, not contacts. In addition to the 8 projects completed there are 5 active projects.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** System Optimization Study

Description of the program (including intent, design, delivery, partnerships and evaluation):

The purpose of this project was to improve the reliability and efficiency on the North Bay Hydro distribution system. System wide optimization and balance will minimize line loss. Studies were completed and optimization runs conducted by consultants, however no action has been undertaken on reducing line losses other than the ongoing improvements for the last several years. The studies provide a roadmap for future engineering work.

Measure(s):

	Measure 1	Measure 2	Measure 3
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ -	$ 40,739.00
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	$ -	$ 40,739.00
Net TRC (in year CDN $):	$ -	-$ 40,739.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	#DIV/0!	0.00

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*			
	Winter			
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):				
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	$ 40,739.02
	Incentive:		
	Total:	$ -	$ 40,739.02
Utility indirect costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ -	$ -
	Total:	$ -	$ -

E. Assumptions & Comments:

The Assumptions for System Optimization is described in section 3.9. As per the 2006 Annual Report the technical data gathered and input into the model during 2006 was for the 44 kV, 22 kV, 12 kV and 4 kV distribution systems. This included the field gathering of wire sizes and the verification of switching information. Data editing and verification was completed. Loads have been assigned based on the transformer data.

The analysis will take place in future years and produce an action plan for implementation that is expected to reduce line losses. No additional work was done on the CDM plan during 2007 and nothing further is expected on this initiative during 2008.
All costs were included in the 2006 Annual Report including TRC Costs. In this 2007 Annual Report these costs are shown as both a Utili

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Optional Program -- Street Light Pilot

Description of the program (including intent, design, delivery, partnerships and evaluation):

This pilot project is a lighting retrofit of 185 watt HPS lights including ballast with light harvester and ballast involving lab testing and handling. This project has merit, but due to the lack of resources and some technical issues to overcome was concluded in 2007. There was also some investigative work done under Optional Programs to develop a program for Sentinel Lights which had merit, but resources were not available to proceed.

Measure(s):

	Measure 1	Measure 2	Measure 3
Base case technology:	Standard Stock		
Efficient technology:	Light Harvester and Ballast		
Number of participants or units delivered for reporting year:	0		
Measure life (years):			
Number of Participants or units delivered life to date	16		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		$ 1,171.72
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 1,767.05	$ 9,193.05
Incremental Measure Costs (Equipment Costs)		$ 432.00
Total TRC costs:	$ 1,767.05	$ 17,483.05
Net TRC (in year CDN $):	-$ 1,767.05	-$ 16,311.33
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ -	0.07

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	0.00	0.02
	Winter	0.00	0.28

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*0*	0	28,000	3,456
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at beginning of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 1,767.05	$ 9,673.05
	Incentive:		
	Total:	$ 1,767.05	$ 9,673.05
Utility indirect costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ -	$ -
	Total:	$ -	$ -

E. Assumptions & Comments:

The Assumptions for the Street Light Pilot are described in section 3.10. As reported in the 2006 Annual Report there were approximately 16 lights installed. Some or all of these lights have been installed and removed at various times, which inflated the cost to unreasonable levels. There has been a great deal of trouble with reliability. North Bay Hydro worked with the manufacturer on problems with the light harvester. North Bay Hydro spent a great deal of time on this CDM initiative and decided not to proceed at this time.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Optional Program -- LED Traffic Lights

Description of the program (including intent, design, delivery, partnerships and evaluation):

A pilot to test LED traffic lighting at a limited number of intersections began in 2005. The Pilot was deemed a success with 41 intersections planned for completion. During 2006 and 2007 37 intersections were completed with four more remaining for 2008.

Measure's):

	Measure 1	Measure 2	Measure 3
Base case technology:	Incandescent Lights		
Efficient technology:	LED 12" and 8" Lenses red, green, amber, pedestrian		
Number of participants or units delivered for reporting year:	1,087		
Measure life (years):	11.58		
Number of Participants or units delivered life to date	1,157		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ *268,772.09*	$ 290,733.57
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ 7,505.37	$ 16,523.37
Incremental Measure Costs (Equipment Costs)	$ 153,967.55	$ 161,680.55
Total TRC costs:	$ 161,472.92	$ 178,203.92
Net TRC (in year CDN $):	$ 107,299.17	$ 112,529.65
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ 1.66	1.63

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	42.41	47.73
	Winter	44.64	50.24

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*4,527,388*	391,024	4,897,703	409,540
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at beginning of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 7,505.37	$ 16,523.37
	Incentive:	$ 15,760.91	$ 15,760.91
	Total:	$ 23,266.28	$ 32,284.28
Utility indirect costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ -	$ -
	Total:	$ -	$ -

E. Assumptions & Comments:

The Assumptions and Comments for the LED Traffic Lights are described in sections 3.1 and 3.11. The North Bay Hydro Assumptions and Measures List is included in Appendix D in worksheet "Appendix D Residential-Optional". In the 2005 Annual Report it was stated the LED Traffic Light pilot was deemed a success and the program was expanded with the objective of having all major intersections in the City converted to LED technology by late 2007. At the end of 2007, most of the objective was met with 37 of 41 intersections completed. The four remaining intersections will be completed in 2008. Savings from the two pilots were reported in 2005. The savings and costs for the 37 intersections are included in this report. All incentives for the pilot and 37 intersections were paid in 2007 and are included in this report. This is a highly successful program with high profile to the general public. The LED Traffic Lights are a vast improvement in quality as opposed to incandescent providing better visibility in poor lighting conditions such as bright sunshine or fog. Indirect costs are included with the utility direct costs.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Optional Program -- Electrical Thermal Storage Demonstation Project

Description of the program (including intent, design, delivery, partnerships and evaluation):

This was a demonstration project to test and show how a Electrical Thermal Storage Heater (ETS) will function in a building in North Bay. This technology has great promise, but is expensive and may be difficult to pass the technical screening analysis.

Measure(s):

	Measure 1	Measure 2	Measure 3
Base case technology:	Standard Baseboard Heater		
Efficient technology:	Electrical Thermal Storage		
Number of participants or units delivered for reporting year:	0		
Measure life (years):	0.00		
Number of Participants or units delivered life to date	1		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ -	$ 792.14
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ -	$ 1,000.00
Incremental Measure Costs (Equipment Costs)	$ -	$ 3,742.20
Total TRC costs:	$ -	$ 4,742.20
Net TRC (in year CDN $):	$ -	-$ 3,950.06
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	#DIV/0!	0.17

C. **Results:** (one or more category may apply)

		Reporting Year	Cumulative Results:
Conservation Programs:			
Demand savings (kW):	*Summer*	0.00	0.00
	Winter	0.00	1.84

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*0*	0	0	0
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

Demand Management Programs:		
Controlled load (kW)		4
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		407
Energy shifted Mid-peak to Off-peak (kWh):		906
Demand Response Programs:		
Dispatchable load (kW):		
Peak hours dispatched in year (hours):		
Power Factor Correction Programs:		
Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):			
	lifecycle	*in year*	
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	$ 4,158.00
	Incremental O&M:	$ -	$ 1,000.00
	Incentive:		
		$ -	$ 5,158.00
Utility indirect costs ($):	*Incremental capital:*	$ -	$ -
	Incremental O&M:	$ -	$ -
	Total:	$ -	$ -

E. Assumptions & Comments:

The Assumptions and Comments for the demonstration Electrical Thermal Storage Heater are described in section 3.12.
This was a demonstration project as per the 2006 Annual Report to test how an Electrical Thermal Storage Heater (ETS) will function in a building in North Bay. It could be used to demonstrate technical and energy saving advantages. Although the ETS functions well, there was little interest in the project. There was no further activity on this project during 2007 and nothing expected during 2008.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Renewable Energy

Description of the program (including intent, design, delivery, partnerships and evaluation):

A good opportunity with the City of North Bay was to obtain funding to determine project feasibility and save electrical energy as per North Bay Hydro's CDM Plan. Funding was approved in 2007 for a landfill gas feasibility study and potential feasibility funding for a solar project was identified near the end of 2007.

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4
Base case technology:				
Efficient technology:				
Number of participants or units delivered for reporting year:				
Measure life (years):				
Number of Participants or unites delivered life to date				

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ -	
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		$ -
Incremental Measure Costs (Equipment Costs)	$ -	
Total TRC costs:	$ -	$ -
Net TRC (in year CDN $):	$ -	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	#DIV/0!	0.00

C. **Results:** (one or more category may apply)

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*			
	Winter			
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*0*	0		
Other resources saved :				
Natural Gas (m3):				
Other Water:				

Demand Management Programs:

Controlled load (kW)		
Energy shifted On-peak to Mid-peak (kWh):		
Energy shifted On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

Demand Response Programs:

Dispatchable load (kW):		
Peak hours dispatched in year (hours):		

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):				
	lifecycle	*in year*	*lifecycle*	*in year*
Energy savings (kWh):				

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 44,941.22	$ 44,941.22
	Incentive:		
	Total:	$ 44,941.22	$ 44,941.22
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The Renewable Energy program is similarly described in section 3.13. Funding was approved for the feasibility study and an advance of $44,941.22 paid to the City of North Bay during 2007 with a second payment expected during 2008. This program started in 2006 with an expected completion date for the end of 2007, but is now expected for completion during 2008. The savings for this landfill project are estimated to be about 1,000 kW demand and 8,800,000 kWh annually. Once the project is completed North Bay Hydro will evaluate the project further to determine if it satisfies all requirements and include in the 2008 Annual Report as appropriate.

For this 2007 Annual Report the $44,941.22 is reported only as a Utility Direct Cost, not as a TRC Cost. If there is a TRC Benefit reported in 2008, the TRC Cost for 2007 will be included with the TRC Cost for 2008.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Appendix C - Program and Portfolio Totals

Report Year: **2007**

1. Residential Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Water Heater Tune-up	$ 60,584	$ 6,699	$ 53,884	9.04	103,842	857,649	19	$ 7,097
Fridge Buy-Back	$ 21,842	$ 6,580	$ 15,262	3.32	58,800	590,400	14	$ 9,389
Energuide for Houses	$ -	$ 914	-$ 914	0.00	0	0	0	$ 914
Information Based --Included Above	$ 196,870	$ 128,278	$ 68,592	1.53	561,933	3,680,330	135	$ 129,358
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Residential**	$ 279,296	$ 142,471	$ 136,824	1.96	724,575	5,128,379	168	$ 146,759
Residential Indirect Costs not attributable to any specific program →								
Total Residential TRC Costs		$ 142,471						
****Totals TRC - Residential**	**$ 279,296**	**$ 142,471**	**$ 136,824**	**1.96**				

2. Commercial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Demand Reduction	$ 122,391	$ 40,556	$ 81,836	3.02	363,249	2,052,119	63.9	$ 15,763
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Commercial**	$ 122,391	$ 40,556	$ 81,836	3.02	363,249	2,052,119	64	$ 15,763

Commercial Indirect Costs not attributable to any specific program →				
#REF!		$ 40,556		
****Totals TRC - Commercial**	**$ 122,391**	**$ 40,556**	**$ 81,836**	**3.02**

3. Institutional Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Demand Reduction	$ 914,341	$ 365,994	$ 548,347	2.50	1,438,051	17,531,613	372	$ 165,761
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Institutional**	$ 914,341	$ 365,994	$ 548,347	2.50	1,438,051	17,531,613	372	$ 165,761
Institutional Indirect Costs not attributable to any specific program →								
#REF!		$ 365,994						
****Totals TRC - Institutional**	**$ 914,341**	**$ 365,994**	**$ 548,347**	**2.50**				

4. Industrial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Demand Reduction	$ 277,697	$ 173,579	$ 104,118	1.60	639,731	4,155,095	108.2	$ 32,617
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				

Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Industrial**	$ 277,697	$ 173,579	$ 104,118	1.60	639,731	4,155,095	108	$ 32,617
Industrial Indirect Costs not attributable to any specific program	→	-						
Total TRC Costs		$ 173,579						
****Totals TRC - Industrial**	**$ 277,697**	**$ 173,579**	**$ 104,118**	**1.60**				

5. Agricultural Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Name of Program A			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Agricultural**	$ -	$ -	$ -	0.00	0	0	0	$ -
Agricultural Indirect Costs not attributable to any specific program	→							
Total TRC Costs		$ -						
****Totals TRC - Agricultural**	**$ -**	**$ -**	**$ -**	**0.00**				

6. LDC System Optimization Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
System Optimization Study	$ -	$ -	$ -	0.00	0	0	0	$ -
Name of Program B			$ -	0.00				

Name of Program C			$ -	0.00					
Name of Program D			$ -	0.00					
Name of Program E			$ -	0.00					
Name of Program F			$ -	0.00					
Name of Program G			$ -	0.00					
Name of Program H			$ -	0.00					
Name of Program I			$ -	0.00					
Name of Program C			$ -	0.00					
***Totals App. B - LDC System Optim**	$ -	$ -	$ -	0.00	0	0	0	$ -	
LDC System Optimization Indirect Costs not attributable to any specific program →									
Total TRC Costs		$ -							
****Totals TRC - LDC System Optimi**	**$ -**	**$ -**	**$ -**	**0.00**					

7. Smart Meters Program

Only spending information that was authorized under the 3rd tranche of MARR is required to be reported for Smart Meters.

Report Year Gross C&DM Expenditures ($) →

8. Optional Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Optional Street Light Pilot	$ -	$ 1,767	-$ 1,767	0.00	0	0	0.0	$ 1,767
Optional LED Traffic Lights	$ 268,772	$ 161,473	$ 107,299	1.66	391,024	4,527,388	45	$ 23,266
Electrical Thermal Storage Heater	$ -	$ -	$ -	0.00	0	0	0	$ -
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Optional**	$ 268,772	$ 163,240	$ 105,532	1.65	391,024	4,527,388	44.6	$ 25,033
Optional Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ 163,240						
****Totals TRC - Optional**	**$ 268,772**	**$ 163,240**	**$ 105,532**	**1.65**				

9. Renewable Energy Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Renewable Energy	$ -	$ -	$ -	0.00	0	0	0	$ 44,941
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Renewable Energy**	$ -	$ -	$ -	0.00	0	0	0	$ 44,941
Renewable Energy Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ -						
****Totals TRC - Renewable Energy**	**$ -**	**$ -**	**$ -**	**0.00**				

LDC's CDM PORTFOLIO TOTALS

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
***TOTALS FOR ALL APPENDIX B**	$ 1,862,497	$ 885,840	$ 976,657	2.10	$ 3,556,630	$ 33,394,594	$ 757	$ 430,874
*Any **other** Indirect Costs not attributable to any specific program* →								
TOTAL ALL LDC COSTS		$ 885,840						
****LDC' PORTFOLIO TRC**	$ 1,862,497	$ 885,840	$ 976,657	2.10				

* The savings and spending information from this row is to be carried forward to Appendix A.

** The TRC information from this row is to be carried forward to Appendix A.

Appendix D Commercial

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Demand Reduction: Base kW	Demand Reduction: Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Demand Reduction: Winter On Peak (kW)	Demand Reduction: Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
	Lighting																								
A	**Completed Project 1 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																								
1	2 - T8 (40W) 2X4	2 - T12 (82W) 2X4'	Ret./Repl.	8760	0.0820	0.0400	718	350	368	0.0420	0.0399	3.4247	$44.63	30000	10.00%	42	46	34	39	50	34	89	34	368
2	2 - T8 (40W) 2X4	2 - T12 (96W) 2X4'	Ret./Repl.	8760	0.0960	0.0400	841	350	491	0.0560	0.0532	3.4247	$44.63	30000	10.00%	56	61	45	52	67	45	119	45	491
3	Removed	2 - T12 (96W) 2X4'	Removed	8760	0.0960	0.0000	841	0	841	0.0960	0.0912	3.4247	$10.00	30000	10.00%	97	105	77	89	114	78	203	78	841
4	Removed	4 - T12 40W (186W) 4' lamps w/magnetic ballast	Removed	4000	0.1860	0.0000	744	0	744	0.1674	0.1590	18.0000	$10.00	30000	10.00%	85	93	69	79	101	69	180	69	744
5	Removed Garage	2 - T12 75W (184W) 8' HO Lamps w/1 magnetic ballast	Ret./Repl.	8760	0.1840	0.0000	1612	0	1612	0.1840	0.1748	2.2831	$22.33	20000	10.00%	185	201	148	171	219	149	389	149	1612
6	TLC Series (70) (91) MH	Replacement	Replacement	8760	0.0000	0.0910	0	797	-797	-0.0910	-0.0865	2.2831	$333.13	20000	10.00%	-92	-99	-73	-84	-108	-74	-193	-74	-797
7	2 - T8 (40W) 2X4	2 - T12 (96W) 2X4'	Ret./Repl.	2190	0.0960	0.0400	210	88	123	0.0340	0.0323	11.4155	$56.50	25000	10.00%	14	15	11	13	17	11	30	11	123
8	2 - T8 (40W) 2X4	2 - T12 (96W) 2X4'	Ret./Repl.	8760	0.0960	0.0400	841	350	491	0.0560	0.0532	3.4247	$56.50	30000	10.00%	56	61	45	52	67	45	119	45	491
9	9 Watt CFL's	Inc. 75 Watt Flood	Ret./Repl.	4000	0.0750	0.0090	300	36	264	0.0563	0.0535	1.5000	$3.01	6000	10.00%	30	33	24	28	36	24	64	24	264
B	**Completed Project 2 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
10	2- T8 (72W)	200W Incandescent	Ret./Repl.	3120	0.2000	0.0720	624	225	399	0.1106	0.1051	8.0128	$193.15	25000	10.00%	46	50	37	42	54	37	96	37	399
C	**Completed Project 3 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
11	13W Screw-In CFL	65W Incandescent	Ret./Repl.	4000	0.0650	0.0130	260	52	208	0.0443	0.0421	2.0000	$2.60	8000	10.00%	24	26	19	22	28	19	50	19	208
D	**Completed Project 4 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
12	T8-2x4 25W (37W) 24hr	T12-2x4 (82W)	Ret./Repl.	8760	0.0820	0.0460	718	403	315	0.0360	0.0342	3.4247	$43.26	30000	10.00%	36	39	29	33	43	29	76	29	315
13	T8-2 lamp 25W (37W)	T12-2x4 (82W)	Ret./Repl.	2920	0.0820	0.0460	239	134	105	0.0291	0.0277	8.2192	$43.26	24000	10.00%	12	13	10	11	14	10	25	10	105
14	14W CFL fixture w/EM ballast 24hr	75W Incandescent	Ret./Repl.	8760	0.0750	0.0140	657	123	534	0.0610	0.0580	1.1416	$3.78	10000	10.00%	61	67	49	57	73	50	129	50	534
15	14W CFL Spot fixture w/EM ballast 24hr	75W Incandescent Spot	Ret./Repl.	8760	0.0750	0.0140	657	123	534	0.0610	0.0580	1.1416	$3.79	10000	10.00%	61	67	49	57	73	50	129	50	534
16	14W CFL Spot fixture w/EM ballast 14hr	75W Incandescent Spot	Ret./Repl.	5110	0.0750	0.0140	383	72	312	0.0520	0.0494	1.9569	$3.78	10000	10.00%	36	39	29	33	42	29	75	29	312
17	14W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	2920	0.0750	0.0140	219	41	178	0.0467	0.0444	2.7397	$3.78	8000	10.00%	20	22	16	19	24	17	43	17	178
18	14W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	100	0.0750	0.0140	8	1	6	0.0016	0.0015	80.0000	$3.78	8000	10.00%	1	1	1	1	1	1	1	1	6
19	14W CFL fixture w/EM ballast	75W Flood Incandescent	Ret./Repl.	525	0.0750	0.0140	39	7	32	0.0084	0.0080	15.2381	$3.79	8000	10.00%	4	4	3	3	4	3	8	3	32
20	2X14W CFL fixture w/EM ballast	75W Flood Incandescent	Ret./Repl.	525	0.0750	0.0140	39	7	32	0.0084	0.0080	15.2381	$3.79	8000	10.00%	4	4	3	3	4	3	8	3	32
E	**Completed Project 5 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
21	2X8 - T8 (98W)	4X8 - T12 (316W) 2X8'	Ret./Repl.	3000	0.3160	0.0980	948	294	654	0.1811	0.1721	10.0000	$129.00	30000	10.00%	75	81	60	69	89	61	158	61	654
22	2X8 - T8 (98W)	2 - T12 (158W) 2X8'	Ret./Repl.	3000	0.1580	0.0980	474	294	180	0.0498	0.0474	10.0000	$129.00	30000	10.00%	21	22	17	19	24	17	43	17	180
23	2X4 - T8 (51W)	2 - T12 (86W) 2X4'	Ret./Repl.	3000	0.0860	0.0510	258	153	105	0.0291	0.0276	10.0000	$51.85	30000	10.00%	12	13	10	11	14	10	25	10	105
24	1X4 - T8 (98W) one ballast for 4 lamps (3 fixtures)	2 - T12 (74W) 1X8'	Ret./Repl.	3000	0.0740	0.0980	222	294	-72	-0.0199	-0.0189	10.0000	$129.00	30000	10.00%	-8	-9	-7	-8	-10	-7	-17	-7	-72
25	Nil	2 - T12 (74W) 1X8'	Remove	3000	0.0740	0.0000	222	0	222	0.0615	0.0584	18.0000	$129.00	30000	10.00%	25	28	20	24	30	21	54	21	222
26	2X4 - T8 (51W)	2 - T12 (158W) 2X8'	Ret./Repl.	3000	0.1580	0.0510	474	153	321	0.0889	0.0845	10.0000	$102.93	30000	10.00%	37	40	30	34	44	30	78	30	321
27	1X4 - T8 (23W)	1 - T12 (44W) 1X4'	Ret./Repl.	3000	0.0440	0.0230	132	69	63	0.0174	0.0166	10.0000	$69.68	30000	10.00%	7	8	6	7	9	6	15	6	63
28	1X4 - T8 (23W)	1 - T12 (44W) 1X4'	Ret./Repl.	3000	0.0440	0.0230	132	69	63	0.0174	0.0166	10.0000	$72.29	30000	10.00%	7	8	6	7	9	6	15	6	63
29	4X4 - T8 (98W)	1 - T12 (316W) 4X8'	Ret./Repl.	3000	0.3160	0.0980	948	294	654	0.1811	0.1721	10.0000	$141.12	30000	10.00%	75	81	60	69	89	61	158	61	654

Appendix D Commercial

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Base kW	Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Winter On Peak (kW)	Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
F	**Completed Projects 6, and 8 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
30	2 - T8 28W (55W) 4' lamps	2 - T12 34W (86W) 4' lamps w/magnetic ballast	Ret./Repl.	4000	0.0860	0.0550	344	220	124	0.0279	0.0265	5.0000	$42.00	20000	10.00%	14	15	11	13	17	11	30	11	124
G	**Completed Projects 7 and 8 -- references section 3.1 and 3.6 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
31	15W Screw-In CFL	60W Incandescent	Ret./Repl.	4000	0.0600	0.0150	240	60	180	0.0384	0.0364	2.0000	$2.60	8000	10.00%	21	22	17	19	24	17	43	17	180
	Exit Sign and Other LED Decorative Lights																							
H	**Completed Project 4 -- references section 3.1 and 3.6 Proxy Number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW, Equipment Life and Free Ridership**																							
32	2.8W LED Exit Light	30W Incandescent Exit Light	Ret./Repl.	8760	0.0300	0.0028	263	25	238	0.0272	0.0258	25.1142	$85.11	220000	10.00%	27	30	22	25	32	22	58	22	238
33	2W LED Decorative Light	7W Incandescent Decorative Light	Ret./Repl.	5112	0.0070	0.0020	36	10	26	0.0045	0.0043	43.0360	$1.70	220000	10.00%	3	3	2	3	3	2	6	2	26
I	**Completed Project 7 -- references section 3.1 and 3.6 Proxy Number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW, Equipment Life and Free Ridership**																							
34	3W LED EXIT sign	2 - 15W (30W) Incandescent EXIT Sign	Ret./Repl.	8760			263	26	237	0.0270	0.0257	25.1142	$95.00	220000	10.00%	27	29	22	25	32	22	57	22	237
	Roof Top																							
J	**Completed Project 9 -- references section 3.1 and 3.6 Proxy number 24 [Outside Air Economizer to no Economizer] of the Commercial Worksheet on the OEB Tables for Load Profiles.**																							
35	SEER 13.45 Roof Top 12 hours per day	Seer 9.5 Roof Top (Assume 10.0 for Efficiency)	Ret./Repl.	4380			29915	23034	6880	1.5709	1.3465	12.0000	$1,660.00		10.00%	790	857	634	729	934	637	1662	637	6880

Appendix D Residential-Optional

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Demand Reduction: Base kW	Demand Reduction: Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Winter On Peak (kW)	Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
	Residential Programs																							
A	Residential Water Heater Tune-up -- reference section 3.2 outlet insulators have been installed during many home visits along with other components of the Water Heater Tune-Up. Number 36 [Average existing stock to Caulking Products] of the Residential Worksheet is used as a Proxy for the load profile.																							
1	Outlet Insulation	Average existing stock	Weather/Winter	Ret./Repl.			18103	18085	18	0.0145	0.0000	25.0000	$0.30		10.00%	2	3	7	0	0	0	3	3	18
B	Residential Fridge Buy-Back -- reference section 3.3 duplicate loadprofile for number 1 of the Residential Worksheet of the OEB tables but showing an Incremental Cost of $53.00 as opposed to the $100.																							
2	Recycling Program	Average existing stock	Removal	Removal	-		1,200	0	1200	0.2877	0.2723	6.0000	$53.00	-	10.00%	82	94	221	72	107	222	179	222	1200
C	Completed Commercial Project 4 -- references section 3.1 and 3.6 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Load Profile.																							
3	14W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	525	0.0750	0.0140	39	7	32	0.0069	0.0000	19.0476	$3.78	10000	10.00%	5	2	6	0	4	4	5	5	32
4	14W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	790	0.0750	0.0140	59	11	48	0.0104	0.0000	12.6582	$3.78	10000	10.00%	7	4	9	0	5	6	8	8	48
5	14W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	265	0.0750	0.0140	20	4	16	0.0035	0.0000	37.7358	$3.78	10000	10.00%	2	1	3	0	2	2	3	3	16
D	Completed Institutional Project 1 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Load Profile.																							
6	T8-2x4 32W (40W)	T12-2x4 (82W)	Ret./Repl.	525	0.0820	0.0400	43	21	22	0.0048	0.0000	38.0952	$53.51	20000	10.00%	3	2	4	0	2	3	4	4	22
E	Completed Institutional Project 3 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Load Profile, Lifespan Hours, Winter and Summer Peak kW, Free Ridership.																							
7	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	1095	0.0600	0.0130	66	14	51	0.0111	0.0000	7.3059	$2.26	8000	10.00%	8	4	10	0	6	7	9	9	51
8	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	180	0.0600	0.0130	11	2	8	0.0018	0.0000	44.4444	$2.26	8000	10.00%	1	1	2	0	1	1	1	1	8
9	CFL Screw-In 20W	75W Incandescent	Ret./Repl.	180	0.0750	0.0200	14	4	10	0.0021	0.0000	44.4444	$2.71	8000	10.00%	1	1	2	0	1	1	2	2	10
10	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	730	0.0600	0.0130	44	9	34	0.0074	0.0000	10.9589	$2.26	8000	10.00%	5	3	7	0	4	5	6	6	34
11	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	365	0.0600	0.0130	22	5	17	0.0037	0.0000	21.9178	$2.26	8000	10.00%	3	1	3	0	2	2	3	3	17
12	CFL Screw-In 20W	75W Incandescent	Ret./Repl.	365	0.0750	0.0200	27	7	20	0.0043	0.0000	21.9178	$2.71	8000	10.00%	3	1	4	0	2	3	3	3	20
13	CFL Screw-In 20W	75W Incandescent	Ret./Repl.	1095	0.0750	0.0200	82	22	60	0.0130	0.0000	7.3059	$2.71	8000	10.00%	9	4	12	0	7	8	10	10	60
F	Completed Institutional Projects 7 and 8 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Load Profile, Lifespan Hours, Winter and Summer Peak kW, Free Ridership.																							
14	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	2320	0.0600	0.0130	139	30	109	0.0235	0.0000	4.3103	$1.43	10000	10.00%	16	8	21	0	12	15	18	18	109
15	CFL Screw-In 23W	100W Incandescent	Ret./Repl.	2320	0.1000	0.0230	232	53	179	0.0385	0.0000	4.3103	$2.34	10000	10.00%	26	13	35	0	20	24	30	30	179
G	Completed Institutional Project 9 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Load Profile, Lifespan Hours, Winter and Summer Peak kW, Free Ridership.																							
16	CFL Screw-In 15W	60W Incandescent	Ret./Repl.	1095	0.0600	0.0150	66	16	49	0.0106	0.0000	7.3059	$2.00	8000	10.00%	7	4	10	0	6	7	8	8	49
17	CFL Screw-In 25W	100W Incandescent	Ret./Repl.	1825	0.1000	0.0250	183	46	137	0.0295	0.0000	5.4795	$2.00	10000	10.00%	20	10	27	0	15	18	23	23	137
H	Completed Institutional Project 9 -- references section 3.1 and 3.8 Proxy Number 39 [Average existing stock to Attic Insulation (R-11 to R-38)] of the Residential Worksheet on the OEB Tables for Load Profile, Equipment Life, Winter and Summer Peak kW, Free Ridership.																							
18	Envelope Improvements	Average existing stock					209093	100357	108736	87.1282	0.0000	25.0000	$50,000.00		10.00%	14986	17127	40179	0	0	0	16243	20201	108736
I	Completed Institutional Project 9 -- references section 3.1 and 3.8 Proxy Number 59 [Average existing stock to Programmable Thermostat (space heating and cooling)] of the Residential Worksheet on the OEB Tables for Load Profile, Energy Savings (kWh) Equipment Life, Winter and Summer Peak kW, Free Ridership.																							
19	Programmable Thermostat (space heating and cooling)	Average existing stock	New				83740	76957	6783	2.7076	2.3015	18.0000	$5,250.00	-	10.00%	475	530	1256	391	614	1256	1005	1256	6783
J	Completed Institutional Project 9 -- references section 3.1 and 3.8 Proxy Number 57 [Average existing stock to Energy Star Air Source Heat Pump] of the Residential Worksheet on the OEB Tables for Load Profile, Equpment life, Winter and Summer Peak kW and Free Ridership AND references section 3.1 and 3.8 Proxy Number 54 [Current standard for central air conditioner to Energy Star Central Air Conditioner} of the Residential Worksheet on the OEB Tables for Load Profile, Equpment life, Winter and Summer Peak kW and Free Ridership. Load Profile and Peak kW are summed together.																							
20	Energy Star Air Source Heat Pump	Electric Baseboards -- S.T. Window Air Cond.	New				325650	226240	99410	47.6042	40.9836	18.0000	$78,750.00		10.00%	8188	9358	21952	7131	10697	22172	8875	11037	99410
K	Completed Institutional Project 9 -- references section 3.1 and 3.8 Proxy Numbers 5 and 12 [Current standard for clothes dryer to High Efficiency Clothes Dryer] of the Residential Worksheet on the OEB Tables for Load Profile, Equipment Life, Winter and Summer Peak kW, Free Ridership.																							
21	High Efficiency Clothes Washer/Dryer	Current standard for clothes dryer	New				848	562	286	0.0117	0.0100	18.0000	$60.00		10.00%	20	22	53	17	26	53	43	53	286
L	Completed Institutional Project 11 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Annual Operating Time, Load Profile, Lifespan Hours, Winter and Summer Peak kW, Free Ridership and Incremental Cost																							
22	CFL Screw-In 26W	100W Incandescent	Ret./Repl.	2320	0.1000	0.0260	232	60	172	0.0370	0.0000	4.3103	$4.00	10000	10.00%	25	13	33	0	19	23	29	29	172
23	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	2320	0.0600	0.0130	139	30	109	0.0235	0.0000	4.3103	$2.00	10000	10.00%	16	8	21	0	12	15	18	18	109
M	Completed Institutional Project 13 -- references section 3.1 and 3.8 Proxy Number 15 [40 W Incandescent to Screw-in CFL 11W] of the Residential Worksheet on the OEB Tables for Annual Operating Time, Load Profile, Lifespan Hours, Winter and Summer Peak kW, Free Ridership and Incremental Cost																							
24	CFL Screw-In 13W	60W Incandescent	Ret./Repl.	2320	0.0600	0.0130	139	30	109	0.0235	0.0000	4.3103	$1.80	10000	10.00%	16	8	21	0	12	15	18	18	109
25	CFL Screw-In 23W	100W Incandescent	Ret./Repl.	2320	0.1000	0.0230	232	53	179	0.0386	0.0000	4.3103	$2.60	10000	10.00%	26	13	35	0	20	24	30	30	179

Appendix D Residential-Optional

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Base kW	Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Winter On Peak (kW)	Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
	Optional Programs																							
N	Optional Program -- reference section 3.11 LED Traffic Lights -- Proxy Number 10 [2 - 15W (30W) Incandescent EXIT Sign to 3W LED EXIT sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW and Free Ridership.																							
26	RED 7.5 W LED Traffic Signal 12" Lens	130 Watt Incendescent Bulb	Ret./Repl.	4000	0.1300	0.0075	520	30	490	0.0559	0.0531	15.3300	$117.54	61,320	10.00%	56	61	45	52	66	45	118	45	490
27	AMBER 7.5 W LED Traffic Signal 12" Lens	130 Watt Incendescent Bulb	Ret./Repl.	760	0.1300	0.0075	99	6	93	0.0106	0.0101	80.6842	$130.60	61,320	10.00%	11	12	9	10	13	9	22	9	93
28	GREEN 7.5 W LED Traffic Signal 12" Lens	130 Watt Incendescent Bulb	Ret./Repl.	4000	0.1300	0.0075	520	30	490	0.0559	0.0531	15.3300	$152.94	61,320	10.00%	56	61	45	52	66	45	118	45	490
29	RED 5.5 W LED Traffic Signal 8" Lens	69 Watt Incendescent Bulb	Ret./Repl.	4000	0.0690	0.0055	276	22	254	0.0290	0.0275	15.3300	$128.36	61,320	10.00%	29	32	23	27	34	24	61	24	254
30	AMBER 5.5 W LED Traffic Signal 8" Lens	69 Watt Incendescent Bulb	Ret./Repl.	760	0.0690	0.0055	52	4	48	0.0055	0.0052	80.6842	$123.78	61,320	10.00%	6	6	4	5	7	4	12	4	48
31	GREEN 5.5 W LED Traffic Signal 8" Lens	69 Watt Incendescent Bulb	Ret./Repl.	4000	0.0690	0.0055	276	22	254	0.0290	0.0275	15.3300	$131.45	61,320	10.00%	29	32	23	27	34	24	61	24	254
32	Arrow 7.5 W LED Traffic Signal 12" Lens	130 Watt Incendescent Bulb	Ret./Repl.	438	0.1300	0.0075	57	3	54	0.0061	0.0058	140.0000	$129.60	61,320	10.00%	6	7	5	6	7	5	13	5	54
33	Pedestrian 8 W LED Traffic Signal 12" Lens	100 Watt Incendescent Bulb	Ret./Repl.	8760	0.1000	0.0080	876	70	806	0.0920	0.0874	7.0000	$267.08	61,320	10.00%	93	100	74	85	109	75	195	75	806

Appendix D Industrial

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Base kW	Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Demand Reduction		EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
										Winter On Peak (kW)	Summer On Peak (kW)													
	Lighting																							
A	**Completed Project 1 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																							
1	Dual T8-2x4 (28 W) (95W)	T12-2X8 (158W)	Ret./Repl.	8760	0.1580	0.0950	1384	832	552	0.0630	0.0599	3.4247	$132.84	30000	10.00%	63	69	51	58	75	51	133	51	552
2	Dual T8-2x4 (28 W) (95W) with motion sensors	T12-2X8 (158W)	Ret./Repl.	8760	0.1580	0.0950	1384	832	552	0.0630	0.0599	2.7397	$132.84	24000	10.00%	63	69	51	58	75	51	133	51	552
3	T8-4x4 (25 W) (46W)	T12-4x4 (164W)	Ret./Repl.	8760	0.1640	0.0460	1437	403	1034	0.1180	0.1121	3.4247	$46.81	30000	10.00%	119	129	95	109	140	96	250	96	1034
4	T8-2x4 (25 W) (49W)	T12-2x4 (86W)	Ret./Repl.	8760	0.0860	0.0490	753	429	324	0.0370	0.0352	3.4247	$48.49	30000	10.00%	37	40	30	34	44	30	78	30	324
5	T8-2x4 (25 W) (49W) with motion sensors	T12-2x4 (86W)	Ret./Repl.	8760	0.0860	0.0490	753	429	324	0.0370	0.0352	2.7397	$48.49	24000	10.00%	37	40	30	34	44	30	78	30	324
6	T8-2x4 (25 W) (46W)	T12-2x4 (82W)	Ret./Repl.	3120	0.0820	0.0460	256	144	112	0.0311	0.0295	9.6154	$30.14	30000	10.00%	13	14	10	12	15	10	27	10	112
7	T8-2x4 (25 W) (46W) with motion sensors	T12-2x4 (82W)	Ret./Repl.	3120	0.0820	0.0460	256	144	112	0.0311	0.0295	7.6923	$30.14	24000	10.00%	13	14	10	12	15	10	27	10	112
8	27W CFL fixture w/EM ballast	100W Incandescent	Ret./Repl.	3120	0.1000	0.0270	312	84	228	0.0597	0.0568	2.5641	$8.86	8000	10.00%	26	28	21	24	31	21	55	21	228
B	**Completed Project 2 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																							
9	2T8 25W (46W)	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0460	753	403	350	0.0400	0.0380	16.4384	$56.58	24000	10.00%	40	44	32	37	48	32	85	32	350
10	2T8 25W (46W)	2 - T12 4 foot (86W)	Replacement	600	0.0860	0.0460	52	28	24	0.0066	0.0063	40.0000	$56.58	24000	10.00%	3	3	2	3	3	2	6	2	24
11	15W Screw-In CFL	60W Incandescent	Ret./Repl.	8760	0.0600	0.0150	526	131	394	0.0450	0.0428	5.7143	$7.63	8000	10.00%	45	49	36	42	53	37	95	37	394
C	**Completed Project 3 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																							
12	T8 2X4 25W (48W)	4 - T12 4 foot (186	Replacement	8760	0.1860	0.0480	1629	420	1209	0.1380	0.1311	3.4247	$179.41	30000	10.00%	139	151	111	128	164	112	292	112	1209
13	T8 2X4 25W (48W) MS	4 - T12 4 foot (186	Removals	8760	0.1860	0.0480	1629	420	1209	0.1380	0.1311	3.9344	$179.41	24000	10.00%	139	151	111	128	164	112	292	112	1209
14	2T8 25W (48W) 16+23	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	3.4247	$29.91	30000	10.00%	38	41	31	35	45	31	80	31	333
15	2T8 25W (48W) MS 16+23	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	3.9344	$29.91	24000	10.00%	38	41	31	35	45	31	80	31	333
16	T8 New Tandem 4X25W (98W)	2 - T12 2X8 foot (158W)	Replacement	8760	0.1580	0.0980	1384	858	526	0.0600	0.0570	3.4247	$120.41	30000	10.00%	60	65	48	56	71	49	127	49	526
17	T8 New Tandem 4X25W (98W) MS	2 - T12 2X8 foot (158W)	Replacement	8760	0.1580	0.0980	1384	858	526	0.0600	0.0570	3.9344	$120.40	24000	10.00%	60	65	48	56	71	49	127	49	526
18	15W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	8760	0.0600	0.0150	526	60	466	0.0450	0.0428	2.0000	$7.17	8000	10.00%	53	58	43	49	63	43	112	43	466
19	4 - T5 HO Lamps in new High Bay fixture (248W)	400W Mercury Vapor (452W)	Ret./Repl.	8760	0.4520	0.2480	3960	2172	1787	0.2040	0.1938	3.4247	$334.16	30000	10.00%	205	223	165	189	243	166	432	166	1787
D	**Completed Project 4 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																							
20	2T8 25W (48W)	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	3.9344	$54.74	24000	10.00%	38	41	31	35	45	31	80	31	333
21	2T8 25W (48W) no motion sensors	2 - T12 4 foot (86W)	Removals	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	2.7397	$54.74	30000	10.00%	38	41	31	35	45	31	80	31	333
22	Nil Removed	2 - T12 4 foot (86W)	Removed	8760	0.0860	0.0000	753	0	753	0.0860	0.0817	3.9344	$28.93	24000	10.00%	86	94	69	80	102	70	182	70	753
23	T8 Tandem 4X25W (87W) Replaced 108	Nil	Replacement	8760	0.0000	0.0870	0	762	-762	-0.0870	-0.0827	3.9344	$86.79	24000	10.00%	-87	-95	-70	-81	-103	-71	-184	-71	-762
24	15W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	8760	0.0600	0.0150	526	131	394	0.0450	0.0428	1.3115	$7.42	8000	10.00%	45	49	36	42	53	37	95	37	394
E	**Completed Project 5 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																							
25	2T8 25W (46W) not controlled	2 - T12 4 foot (86W)	Replacement	2600	0.0860	0.0460	224	120	104	0.0288	0.0274	11.5385	$53.45	30000	10.00%	12	13	10	11	14	10	25	10	104
26	2T8 25W (46W) controlled	2 - T12 4 foot (86W)	Replacement	2600	0.0860	0.0460	224	120	104	0.0288	0.0274	13.1868	$53.45	24000	10.00%	12	13	10	11	14	10	25	10	104
27	2T8 25W (48W)	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	9.2308	$54.68	24000	10.00%	38	41	31	35	45	31	80	31	333
28	2T8 25W Tandem (98W)	2 - T12 8 foot (160W)	Replacement	8760	0.1600	0.0980	1402	858	543	0.0620	0.0589	9.2308	$173.39	24000	10.00%	62	68	50	58	74	50	131	50	543
29	2X8T8 25W (98W)	4 - T12 4 foot (186W)	Replacement	8760	0.1860	0.0980	1629	858	771	0.0880	0.0836	9.2308	$173.39	24000	10.00%	88	96	71	82	105	71	186	71	771
30	2T8 25W (48W)	2 - T12 4 foot (86W)	Replacement	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	9.2308	$54.68	24000	10.00%	38	41	31	35	45	31	80	31	333
31	T5 HO (248W)	400W Mercury Vapor	Ret./Repl.	8760	0.4520	0.2480	3960	2172	1787	0.2040	0.1938	9.6154	$481.21	25000	10.00%	205	223	165	189	243	166	432	166	1787
32	Removed	400W Mercury Vapor	Removed	8760	0.4520	0.0000	3960	0	3960	0.4520	0.4294	18.0000	$0.00	25000	10.00%	454	493	365	419	537	367	957	367	3960

Appendix D Industrial

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Demand Reduction																				
					Base kW	Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Winter On Peak (kW)	Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
F	**Completed Project 6 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																								
33	2T8 25W (40W)	3 - T12 4 foot (112W)	Replacement	8760	0.1120	0.0480	981	420	561	0.0640	0.0608	2.7397	$99.33	24000	10.00%	64	70	52	59	76	52	135	52	561
34	2T8 25W (48W)	4 - T12 4 foot (186W)	Replacement	8760	0.1860	0.0480	1629	420	1209	0.1380	0.1311	2.7397	$128.00	24000	10.00%	139	151	111	128	164	112	292	112	1209
35	2T8 25W (48W)	4 - T12 4 foot (186W)	Replacement	8760	0.1860	0.0480	1629	420	1209	0.1380	0.1311	3.4247	$127.93	30000	10.00%	139	151	111	128	164	112	292	112	1209
36	2T8 25W (48W)	2 - T12 4 foot (86W)	Ret./Repl.	8760	0.0860	0.0480	753	420	333	0.0380	0.0361	3.4247	$42.11	30000	10.00%	38	41	31	35	45	31	80	31	333
37	2X8T8 25W (97W)	2 - T12 8 foot (158W)	Replacement	8760	0.1580	0.0970	1384	850	534	0.0610	0.0580	3.4247	$133.40	30000	10.00%	61	67	49	57	73	50	129	50	534
38	2X8T8 25W (97W)	2 - T12 8 foot (158W)	Removals	8760	0.1580	0.0970	1384	850	534	0.0610	0.0580	3.4247	$133.40	30000	10.00%	61	67	49	57	73	50	129	50	534
G	**Completed Project 7 -- references section 3.1 and 3.7 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile and Free Ridership.**																								
39	4 - T8 Lamps (75W)	2 - T12 (160W) 2X8'	Ret./Repl.	3484	0.1600	0.0750	557	261	296	0.0765	0.0727	7.1757	$165.00	25000	10.00%	34	37	27	31	40	27	72	27	296
40	4 - T8 Lamps (75W) with motion sensors	2 - T12 (160W) 2X8'	Ret./Repl.	3484	0.1600	0.0750	557	261	296	0.0765	0.0727	5.7405	$165.00	20000	10.00%	34	37	27	31	40	27	72	27	296
41	1X4 - T8 Dual(40W)	1 - T12 (34W)(74W) 1X8'	Ret./Repl.	3484	0.0740	0.0400	258	139	118	0.0306	0.0291	7.1757	$52.50	25000	10.00%	14	15	11	13	16	11	29	11	118
42	2 - T8 25W (40W)	2 - T12 34W (78W) 4' lamps	Ret./Repl.	3484	0.0780	0.0440	272	153	118	0.0306	0.0291	7.1757	$52.50	25000	10.00%	14	15	11	13	16	11	29	11	118
43	4 - T8 Lamps (75W)	400W Metal Halide (452W)	Ret./Repl.	3484	0.4520	0.0750	1575	261	1313	0.3393	0.3223	7.1757	$190.00	25000	10.00%	151	164	121	139	178	122	317	122	1313
44	4 - T8 Lamps (75W)	Additional	New	3484	0.0000	0.0750	0	261	-261	-0.0675	-0.0641	7.1757	$190.00	25000	10.00%	-30	-33	-24	-28	-35	-24	-63	-24	-261
45	4 - T8 Lamps (75W)	400W Metal Halide (452W) Base Case	Ret./Repl.	3484	0.4520	0.0750	1575	261	1313	0.3393	0.3223	7.1757	$190.00	25000	10.00%	151	164	121	139	178	122	317	122	1313
46	4 - T8 Lamps (75W)	Additional	New	3484	0.0000	0.0750	0	261	-261	-0.0675	-0.0641	7.1757	$190.00	25000	10.00%	-30	-33	-24	-28	-35	-24	-63	-24	-261
	Exit Sign																								
H	**Completed Project 7 -- references section 3.1 and 3.6 Proxy Number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW, Equipment Life and Free Ridership**																								
47	1.6W LED EXIT Sign	30W Incandescent EXIT	Ret./Repl.	8760	0.0300	0.0017	263	15	248	0.028	0.027	25.11	$81.30	220000	10.00%	28	31	23	26	34	23	60	23	248
	Control Systems -- Occupancy, Zone, Timer, Dimmer Switches, Manual Switches																								
I	**Completed Project 7 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
48	Motion Sensor (10) Controls (103 fixtures - 5,047 W con	On/Off Switch Control	New/Retro.	8760			44212	30948	13264	4.2395	3.5771	10.0000	$1,720.22		10.00%	1522	1653	1222	1405	1800	1229	3205	1229	13264
49	Motion Sensor (33) Controls (107 fixtures - 4922 W cont	On/Off Switch Control	New/Retro.	3390			16913	11821	5093	1.6278	1.3734	10.0000	$6,498.62		10.00%	585	635	469	539	691	472	1230	472	5093
J	**Completed Project 2 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
50	Motion Sensors (6) controlling 52 fixtures -- 2392 W Cor	Fifty two Fixtures with no Motion Sensors	New/Retro.	8760	1.9933		20954	3492	17462	1.0325	0.8711	10.0000	$2,300.36		10.00%	2004	2176	1609	1849	2370	1618	4219	1618	17462
51	Motion Sensors (1) controlling 6 fixtures -- 90 W Controll	Six Fixtures with no Motion Sensors	New/Retro.	8760	0.0750		788	131	657	0.0389	0.0328	10.0000	$265.43		10.00%	75	82	61	70	89	61	159	61	657
							646																		
K	**Completed Project 3 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
52	Motion Sensors (10) controlling 40 fixtures -- 1920 W Co	Forty Fixtures with no Motion Sensors	New/Retro.	8760	0.5830		16819	11712	5107	0.8288	0.6992	10.0000	$1,972.34		10.00%	586	636	470	541	693	473	1234	473	5107
53	Motion Sensors (1) controlling 1 fixture -- 98 W Controlle	One Fixture with no Motion Sensors	New/Retro.	8760	0.0298		858	598	261	0.0423	0.0357	10.0000	$49.31		10.00%	30	32	24	28	35	24	63	24	261
L	**Completed Project 4 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
54	Motion Sensors (8) controlling 46 fixtures -- 2034 W Cor	Forty Six fixtures with no Motion Sensors	New/Retro.	8760	0.6176		17818	12407	5410	0.8780	0.7407	10.0000	$1,542.99		10.00%	621	674	498	573	734	501	1307	501	5410
M	**Completed Project 5 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
55	Motion Sensors (17) controlling 65 fixtures -- 2990 W Co	Sixty five Fixtures with no Motion Sensors	New/Retro.	2600	0.8970		7774	5442	2332	1.2907	1.0889	10.0000	$3,271.40		10.00%	268	291	215	247	316	216	563	216	2332
56	Motion Sensors (7) controlling 39 fixtures -- 3772 W Cor	Thirty nine Fixtures with no Motion Sensors	New/Retro.	8760	2.6525		33043	9807	23236	1.6282	1.3736	10.0000	$2,062.69		10.00%	2667	2895	2141	2461	3153	2152	5614	2152	23236
							23130																		
N	**Completed Project 6 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
57	Motion Sensors (5) controlling 9 fixtures -- 432 W Contro	Nine Fixtures with no Motion Sensors	New/Retro.	8760	0.1312		3784	2635	1149	0.1865	0.1573	10.0000	$1,061.00		10.00%	132	143	106	122	156	106	278	106	1149
O	**Completed Project 7 -- references 3.1 and 3.7 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																								
58	Motion Sensors (4) -- controlling 26 fixtures -- 1875 watt	On/Off Switch Control	New/Retro.	3484	1875.0000		6533	4573	1960	0.6264	0.5285	10.0000	$668.00		10.00%	225	244	181	208	266	182	473	182	1960

Appendix D Institutional

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Base kW	Energy Efficient kW	Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Demand Reduction		EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
										Winter On Peak (kW)	Summer On Peak (kW)													
	Lighting																							
A	**Completed Project 1 -- references section 3.1 and 3.8 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
1	T8-2x4 32W (40W) 24hr	T12-2x4 (82W)	Ret./Repl.	8760	0.0820	0.0400	718	350	368	0.0420	0.0399	3.4247	$53.47	30,000	10.00%	42	46	34	39	50	34	89	34	368
2	T8-1x4 32W (20W) 24hr	T12-1x4 (42W)	Ret./Repl.	8760	0.0420	0.0200	368	175	193	0.0220	0.0209	3.4247	$49.97	30,000	10.00%	22	24	18	20	26	18	47	18	193
3	T8-2x4 32W (40W)	T12-2 lamp (82W)	Ret./Repl.	5110	0.0820	0.0400	419	204	215	0.0378	0.0359	5.8708	$53.47	30,000	10.00%	25	27	20	23	29	20	52	20	215
B	**Completed Project 2 -- references section 3.1 and 3.8 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
4	2 - T8 (49W) 2X4	4 - T12 (82W) 2X4'	Ret./Repl.	3691	0.0820	0.0490	303	181	122	0.0297	0.0282	6.7732	$50.87	25000	10.00%	14	15	11	13	17	11	29	11	122
5	Reflector 20W EL/AR40	150W Incandescent	Ret./Repl.	3691	0.1500	0.0200	554	74	480	0.1108	0.1053	2.1674	$12.71	8000	10.00%	55	60	44	51	65	44	116	44	480
6	Reflector 20W EL/AR40	150W Incandescent	Ret./Repl.	841	0.1500	0.0200	126	17	109	0.0287	0.0272	9.5125	$12.71	8000	10.00%	13	14	10	12	15	10	26	10	109
7	Reflector 20W EL/AR40	150W Incandescent	Ret./Repl.	1845	0.1500	0.0200	277	37	240	0.0629	0.0598	4.3360	$12.71	8000	10.00%	28	30	22	25	33	22	58	22	240
8	Reflector 20W EL/AR40	150W Incandescent	Ret./Repl.	1845	0.1500	0.0200	277	37	240	0.0629	0.0598	4.3360	$19.22	8000	10.00%	28	30	22	25	33	22	58	22	240
C	**Completed Project 3 -- references section 3.1 and 3.8 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
9	T8-1x4 25W (23W)	T8-1x4 32 watt (30W)	Ret./Repl.	8760	0.0300	0.0230	263	201	61	0.0070	0.0067	3.4247	$8.07	30000	10.00%	7	8	6	6	8	6	15	6	61
10	T8-2x4 25W (40W)	T8-2x4 32 watt (51W)	Ret./Repl.	8760	0.0510	0.0400	447	350	96	0.0110	0.0105	3.4247	$16.15	30000	10.00%	11	12	9	10	13	9	23	9	96
11	T8-2x4 25W (40W)	T8-2x4 32 watt (51W)	Ret./Repl.	730	0.0510	0.0400	37	29	8	0.0022	0.0021	27.3973	$16.15	20000	10.00%	1	1	1	1	1	1	2	1	8
12	T8-1x4 25W (23W)	T8-1x4 32 watt (30W)	Ret./Repl.	730	0.0300	0.0230	22	17	5	0.0014	0.0013	27.3973	$8.07	20000	10.00%	1	1	0	1	1	0	1	0	5
13	T8-2x4 25W (40W)	2-T12 Utube (96W)	Ret./Repl.	730	0.0960	0.0400	70	29	41	0.0113	0.0108	27.3973	$295.95	20000	10.00%	5	5	4	4	6	4	10	4	41
14	T8-2x4 25W (40W)	2-T12 Utube (96W)	Ret./Repl.	8760	0.0960	0.0400	841	350	491	0.0560	0.0532	3.4247	$166.10	30000	10.00%	56	61	45	52	67	45	119	45	491
15	T8-4x4 25 (75W)	T8-4x4 32 watt (104W)	Ret./Repl.	2080	0.1040	0.0750	216	156	60	0.0167	0.0159	12.0192	$32.30	25000	10.00%	7	8	6	6	8	6	15	6	60
16	T8-2x4 25W (40W)	T12-2x4 (82W)	Ret./Repl.	8760	0.0820	0.0400	718	350	368	0.0420	0.0399	3.4247	$48.44	30000	10.00%	42	46	34	39	50	34	89	34	368
17	T8-2x4 25W (40W)	2-T12 Utube (96W)	Ret./Repl.	1560	0.0960	0.0400	150	62	87	0.0242	0.0230	16.0256	$0.00	25000	10.00%	10	11	8	9	12	8	21	8	87
18	T8-2x4 25W (40W)	T12-2x4 (82W)	Ret./Repl.	730	0.0820	0.0400	60	29	31	0.0085	0.0081	27.3973	$48.44	20000	10.00%	4	4	3	3	4	3	7	3	31
19	T8-4x4 25W (75W)	T12-4x4 (164W)	Ret./Repl.	1560	0.1640	0.0750	256	117	139	0.0384	0.0365	12.8205	$70.36	20000	10.00%	16	17	13	15	19	13	34	13	139
20	26W CFL fixture w/EM ballast	100W Incandescent	Ret./Repl.	4380	0.1000	0.0260	438	114	324	0.0631	0.0599	2.2831	$5.17	10000	10.00%	37	40	30	34	44	30	78	30	324
21	13W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	4380	0.0600	0.0130	263	57	206	0.0401	0.0381	2.2831	$4.53	10000	10.00%	24	26	19	22	28	19	50	19	206
22	13W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	2080	0.0600	0.0130	125	27	98	0.0256	0.0244	3.8462	$4.53	8000	10.00%	11	12	9	10	13	9	24	9	98
23	13W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	1560	0.0600	0.0130	94	20	73	0.0192	0.0183	5.1282	$4.53	8000	10.00%	8	9	7	8	10	7	18	7	73
24	13W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	730	0.0600	0.0130	44	9	34	0.0090	0.0086	10.9589	$4.53	8000	10.00%	4	4	3	4	5	3	8	3	34
D	**Completed Project 4 -- references section 3.1 and 3.8 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
25	T8-2x4 28 (45W)	T12-2x4 (82W)	Ret./Repl.	3120	0.0820	0.0450	256	140	115	0.0320	0.0304	8.3333	$44.36	26000	10.00%	13	14	11	12	16	11	28	11	115
26	T8-1x4 28 (26W)	T12-1x4 (42W)	Ret./Repl.	3120	0.0420	0.0260	131	81	50	0.0138	0.0131	8.3333	$49.78	26000	10.00%	6	6	5	5	7	5	12	5	50
27	T8-4x4 28W (90W)	T12-4x4 (164W)	Ret./Repl.	3120	0.1640	0.0900	512	281	231	0.0639	0.0607	8.3333	$59.26	26000	10.00%	27	29	21	24	31	21	56	21	231
28	T8-2x3 25W (26W)	T12-2x3 (42W)	Ret./Repl.	3120	0.0420	0.0260	131	81	50	0.0138	0.0131	8.3333	$28.49	26000	10.00%	6	6	5	5	7	5	12	5	50
29	T8-1X2 (18W)	T12-1X2 (30W)	Ret./Repl.	3120	0.0300	0.0180	94	56	37	0.0104	0.0098	9.6154	$28.66	30000	10.00%	4	5	3	4	5	3	9	3	37
30	T8-U-Tube (51W)	T12-U-Tube (96W)	Ret./Repl.	3120	0.0960	0.0510	300	159	140	0.0389	0.0369	7.6923	$35.01	24000	10.00%	16	17	13	15	19	13	34	13	140
31	Removed	MV 100 Watt (120W)	Removed	3120	0.1200	0.0000	374	0	374	0.0960	0.0912	18.0000	$6.35	20000	10.00%	43	47	34	40	51	35	90	35	374
32	12W CFL R20	100W Incandescent	Ret./Repl.	3120	0.1000	0.0120	312	37	275	0.0720	0.0684	2.5641	$12.48	8000	10.00%	32	34	25	29	37	25	66	25	275
33	20W Par 38 CFL	65W Incandescent	Ret./Repl.	3120	0.0650	0.0200	203	62	140	0.0368	0.0350	2.5641	$10.70	8000	10.00%	16	17	13	15	19	13	34	13	140
34	12W G25 CFL	65W Incandescent	Ret./Repl.	3120	0.0650	0.0120	203	37	165	0.0434	0.0412	1.9231	$11.23	6000	10.00%	19	21	15	18	22	15	40	15	165
35	16W BR CFL	65W Incandescent	Ret./Repl.	3120	0.0650	0.0160	203	50	153	0.0401	0.0381	1.9231	$14.98	6000	10.00%	18	19	14	16	21	14	37	14	153
36	15W CFL fixture w/EM ballast	65W Incandescent	Ret./Repl.	3120	0.0650	0.0150	203	47	156	0.0409	0.0389	3.2051	$9.16	10000	10.00%	18	19	14	17	21	14	38	14	156
37	15W CFL fixture w/EM ballast	60W Incandescent	Ret./Repl.	3120	0.0600	0.0150	187	47	140	0.0368	0.0350	3.2051	$9.16	10000	10.00%	16	17	13	15	19	13	34	13	140
38	15W CFL fixture w/EM ballast	50W Incandescent	Ret./Repl.	3120	0.0500	0.0150	156	47	109	0.0286	0.0272	3.2051	$9.16	10000	10.00%	13	14	10	12	15	10	26	10	109

Appendix D Institutional

North Bay Hydro Assumptions and Measures List

Number	Efficient Equipment & Technologies	Base Equipment & Technologies	Decision Type	Annual Operating Time hrs/yr	Demand Reduction		Base Annual Energy (kWh/yr)	Efficient Energy Use (kWh/yr)	Annual Energy Savings with Upgrade (kWh/yr)	Winter On Peak (kW)	Summer On Peak (kW)	EE Technology Life	Incremental Equipment Cost $	Lifespan, hrs	Free Ridership	Energy Savings Winter Peak (kW.h)	Energy Savings Winter Mid (kW.h)	Energy Savings Winter Off Peak (kW.h)	Energy Savings Summer Peak (kW.h)	Energy Savings Summer Mid (kW.h)	Energy Savings Summer Off Peak (kW.h)	Energy Savings Shoulder Mid (kW.h)	Energy Savings Shoulder Off (kW.h)	Annual Energy Savings with Upgrade (kWh/yr)
					Base kW	Energy Efficient kW																		
E	**Completed Project 5 -- references section 3.1 and 3.8 Proxy Number 1 [4-T12 34W (156W) to 2-T8 32W (58W)] of the Commercial Worksheet on the OEB Tables for Load Profile.**																							
39	4X4 T8 28W (98W)	4X4 T12 (164W)	Replacement	5000	0.1640	0.0980	820	490	330	0.0594	0.0564	5.2000	$59.38	26000	10.00%	38	41	30	35	45	31	80	31	330
40	2X4T8 28W (49W)	4X4 T12 (164W)	Replacement	5000	0.1640	0.0490	820	245	575	0.1035	0.0983	5.2000	$54.55	26000	10.00%	66	72	53	61	78	53	139	53	575
41	2X4T8 28W (49W)	2X4 T12 (84W)	Replacement	5000	0.0840	0.0490	420	245	175	0.0315	0.0299	5.2000	$54.55	26000	10.00%	20	22	16	19	24	16	42	16	175
42	Removed	2X4 T12 (84W) Removed	Removed	5000	0.0840	0.0000	420	0	420	0.0756	0.0718	18.0000	$32.33	26000	10.00%	48	52	39	44	57	39	101	39	420
43	2T8 28W (49W)	2 - T12 4 foot (84W)	Replacement	1000	0.0840	0.0490	84	49	35	0.0097	0.0092	18.0000	$54.55	18000	10.00%	4	4	3	4	5	3	8	3	35
44	26W CFL fixture w/EM ballast	100W Incandescent	Ret./Repl.	5000	0.1000	0.0260	500	130	370	0.0631	0.0599	1.6000	$3.99	8000	10.00%	42	46	34	39	50	34	89	34	370
45	26W CFL fixture w/EM ballast	75W Incandescent	Ret./Repl.	5000	0.0750	0.0260	375	130	245	0.0418	0.0397	1.6000	$3.99	8000	10.00%	28	31	23	26	33	23	59	23	245
46	200 W (258W) Ceramic Pulse Start	500W PAR Halogen	Ret./Repl.	7280	0.5000	0.2580	3640	1878	1762	0.2420	0.2299	2.0604	$80.00	15000	10.00%	202	220	162	187	239	163	426	163	1762
47	360W Super Metal Halide Lamp	400W Metal Halide Lamp	Ret./Repl.	7280	0.4550	0.4100	3312	2985	328	0.0450	0.0428	2.7473	$25.00	20000	10.00%	38	41	30	35	44	30	79	30	328
	Exit Sign																							
F	**Completed Project 1 -- references section 3.1 and 3.8 Proxy Number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW, Equipment Life and Free Ridership**																							
48	1.6W LED Exit Light	30W Incandescent Exit Light	Ret./Repl.	8760	0.0300	0.0016	263	14	249	0.0284	0.0270	25.1142	$20.00	220000	10.00%	29	31	23	26	34	23	60	23	249
G	**Completed Project 4 -- references section 3.1 and 3.8 Proxy Number 10 [2-15W (30W) Incandescent Exits Sign to 3W LED Exit Sign] of the Commercial Worksheet on the OEB Tables for Load Profile, Winter and Summer Peak kW, Equipment Life and Free Ridership**																							
49	2W LED EXIT sign	2 - 15W (30W) Incandescent EXIT Sign	Ret./Repl.	8760	0.0300	0.0020	263	18	245	0.0280	0.0266	25.1142	$45.50	220000	10.00%	28	31	23	26	33	23	59	23	245
	Control Systems -- Parking Lot Controllers, HVAC, Occupancy, Zone, Programmable Thermostats																							
H	**Completed Project 1 -- references section 3.1 and 3.8 Proxy Number 45 [Average existing stock to Window Upgrade (Sample Only as Proxy, all Energuide items the same)] of the Residential Worksheet on the OEB Tables for Load Profile and Free Ridership**																							
50	Intelligent Parkjing Lot Controllers	No Control, previous times were by-passed	Ret./Repl.				103092	51546	51546	9.0000	0.0000	25.0000	$8,000.00		10.00%	7104	8119	19047	0	0	0	7700	9576	51546
51	New intake damper, thermostat and controls. Relocate thermostat, instal interlock.	Replace old comtrol and manual systems	Ret./Repl.						8640	0.0000	0.0000	15.0000	$3,551.00		10.00%	1191	1361	3193	0	0	0	1291	1605	8640
I	**Completed Project 3 -- references 3.1 and 3.8 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Load Profile, Winter Peak, Summer Peak and Equipment Life**																							
52	Occupancy Sensor Controls (13) Average 240W -- 3120	On/Off Switch Control	New/Retro.				14040	9828	4212	1.3463	1.1359	10.0000	$1,122.68		10.00%	483	525	388	446	572	390	1018	390	4212
J	**Completed Project 9 -- references 3.1 and 3.8 Proxy Number 17 [On/Off Switch Control to Occupancy Sensor Control (private office - 1200 W controlled)] of the OEB Tables in the Commercial Worksheet for Equipment Life and Free Ridership. Load Profile, Winter Peak and Summer Peak were based on Seasonal Energy.**																							
53	Photocell Control HPS 70 Watt (86W)	No Photocell Control HPS 70 Watt (86W)	Ret./Repl.				753.360	376.680	377	0.0526	0.0858	10.0000	$137.00		10.00%	29	42	35	48	46	53	85	40	377
K	**Completed Project 12 -- references 3.1 and 3.8 Proxy Number 59 [Average existing stock to Programmable Thermostat (space heating and cooling)] of the OEB Tables in the Commercial Worksheet for Equipment Life and Free Ridership. Load Profile, Winter Peak and Summer Peak, Energy Efficiency Electrical Usage.**																							
54	Programmable Thermostat (space heating and cooling)	Average existing stock	Ret./Repl.				72300	66444	5856	2.3398	2.0056	18.0000	$759.03		10.00%	402	460	1079	349	523	1085	872	1085	5856
	Motor Efficiency -- Operation and High Efficient Motors																							
L	**Completed Project 10 -- references section 3.1 and 3.8 -- Required separate calculations and used Free Ridership as the normal 10% and Equipment Life as 15 years as per other motors.**																							
55	High Efficiency Motors 6-40 HP, Operating and less HP	Normal Motors 200, 150, and 50HP	Ret./Repl.				1194489	801383.04	393105.93	74.0562	87.4921	15.0000	$52,187.93		10.00%	23621	26995	67447	29580	33805	83909	55629	72121	393106