

**Report to Committee of the Whole  
May 13, 2013**



**Waterloo Region  
District School Board**

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**Director of Education**

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**SUBJECT: Energy Update**

**ORIGINATOR:** This report was prepared by Marilyn Allen, Executive Superintendent of Business and Financial Services, Ian Gaudet, Controller of Facility Services, Ron Dallan, Manager of Capital Projects, Lou Lima, Mechanical, Electrical and Environmental Services Manager, and Steve Feeney, Supervisor of Energy Conservation, in consultation with Executive Committee.

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**PURPOSE:**

The purpose of this report is to update the board with respect to energy consumption across the Waterloo Region District School Board.

**BACKGROUND:**

The Green Energy Act (Ontario Regulation 397/11, or O.Reg. 397/11), formerly the Green Energy and Green Economy Act, came into effect in 2009 in Ontario and repealed the Energy Conservation Leadership Act and the Energy Efficiency Act.

In 2008, the Ministry launched an Energy Management and Conservation Initiative and appointed an energy conservation officer from the education sector to provide the Ministry with advice, provide boards with technical support, and help to implement and manage specific energy initiatives. In 2009, the Ministry launched a project referred to as the Utility Consumption Database (UCD). The UCD will report on utility consumption and greenhouse gas emissions for more than 5,000 schools and administrative buildings across 72 boards when complete.

O.Reg. 397/11 outlines reporting requirements to be complete by July 1, 2013. The completion of the UCD will achieve the board's reporting requirements as required for Phase One of O.Reg. 397/11. The board is required to make this information available publicly, either through a report or on the board web-site, for example. At some point in the future, the Ministry of Energy will make this data available publicly for applicable sectors.

In school calendar years 2009/2010, 2010/2011 and 2011/2012, Business Services provided energy updates to the board through the Energy Efficient School Funding (EESF) annual capital report. EESF funding was targeted for capital investment into schools that were below the average in terms of energy performance. The program for EESF was discontinued by the Ministry at the end of school year 2011/2012. As such, no capital funding is being provided targeted solely at reducing energy consumption, although this is a founding principal for expenditures of capital from School Renewal (SR), School Condition Improvement (SCI) or new capital investment as Business Services continue to deliver capital projects across the region.

**STATUS**

**Energy Use Intensity and Consumption**

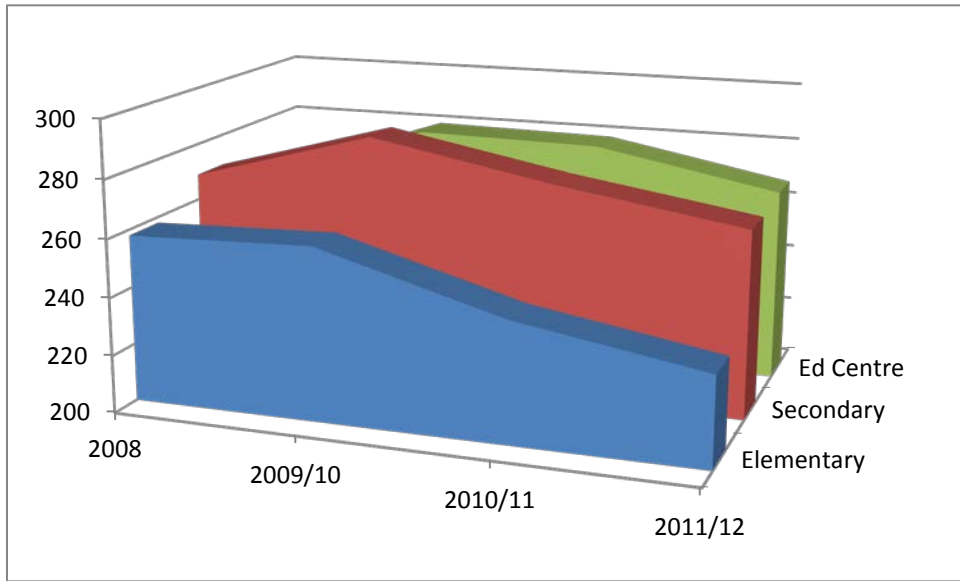
Energy Use Intensity (EUI) measured in equivalent kilowatt hours per square metre (ekWh/m<sup>2</sup>) is the base unit for comparison purposes. This metric is developed by first weather normalizing gas heating units, often reported as cubic metres of gas or gigajoules. Cubic metres of gas or gigajoules are then converted to equivalent kilowatt hours (ekWh). Total energy consumption is calculated by adding ekWh of gas use to electrical consumption, already reported in kWh.

Determining intensity involves accounting for square footage of all facilities in our inventory. This produces the EUI measured in ekWh/m<sup>2</sup>.

Previous reports used a baseline of 2008 (January through December calendar year) as a benchmark. It is important to note that subsequent data is presented on a school calendar year basis.

EUI is presented in Figure 1 as follows.

Figure 1 – Energy Use Intensity (ekWh/m2) versus Year



When considering elementary and secondary schools on a combined basis, the board has experienced a 9.6% reduction in EUI when comparing 2011/12 to 2008 average intensity.

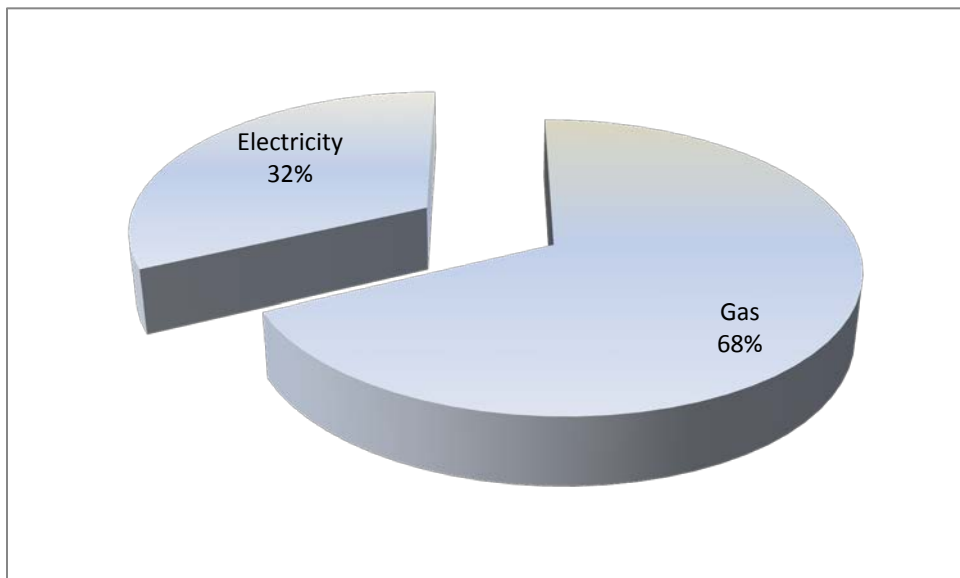
Detailed EUI for each school is presented in Appendix A for elementary and Appendix B for secondary schools and the Education Centre.

It is important to understand fuel sources within our Board. Efforts have been made to remove the reliance on heating oil as a fuel source as this contributes to greater greenhouse gas (GHG) production and is generally more costly. As such, no Waterloo Region District School Board schools currently rely on heating oil as a fuel source.

Consumption by commodity is an important factor that drives expenditures. Gas is at a comparatively low cost to electricity. As such, a greater reliance on gas as a resource is currently beneficial for our operational budget.

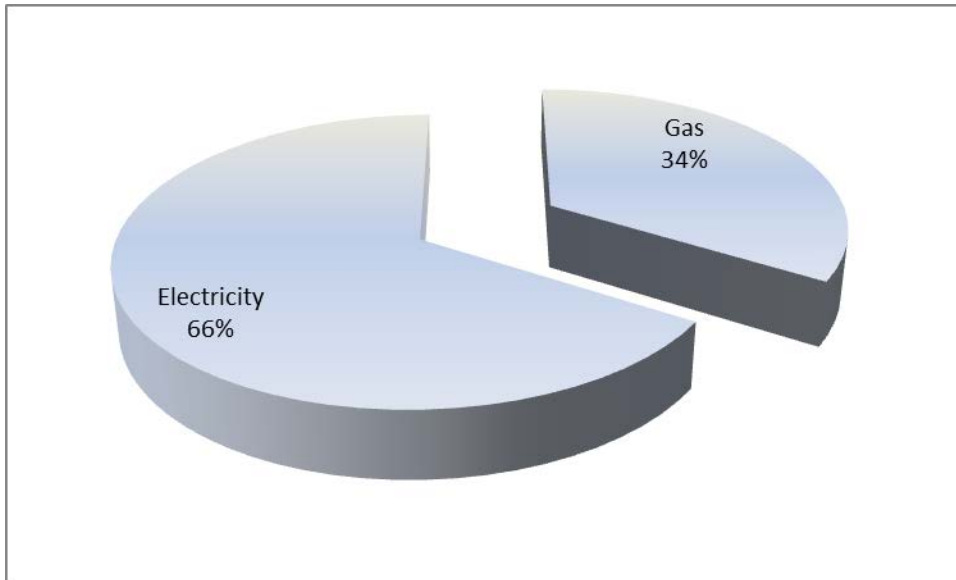
Energy consumption by commodity is presented in Figure 2 for 2011/12.

Figure 2 – Energy Consumption by Commodity (2011/12)



Energy expenditures by commodity are presented in Figure 3 for 2011/12.

Figure 3 – Expenditures by Commodity (2011/12)



On average for 2011/12, gas cost approximately 2.9 cents per ekwh and electricity cost approximately 12.1 cents per ekwh with an average for both estimated at 5.79 cents.

Energy intensity is driven by consumption. Consumption is an aspect over which the board and its stakeholders have partial control. Factors that are controllable may include:

- Behaviours
- Waste minimization
- Use of efficient technologies
- Automation and control technologies (Building Automation Systems or BAS)
- Building envelope improvements
- Designated periods of set-back and/or shut down

Consumption is also driven by factors beyond stakeholder control and can include factors such as:

- Weather (colder winter drives heating demand)
- Hours of operation (extended use for Ministry initiatives such as Community Use)
- Growth of region (new schools and additional portables)
- Expansion of facilities and square footage (FDK additions)

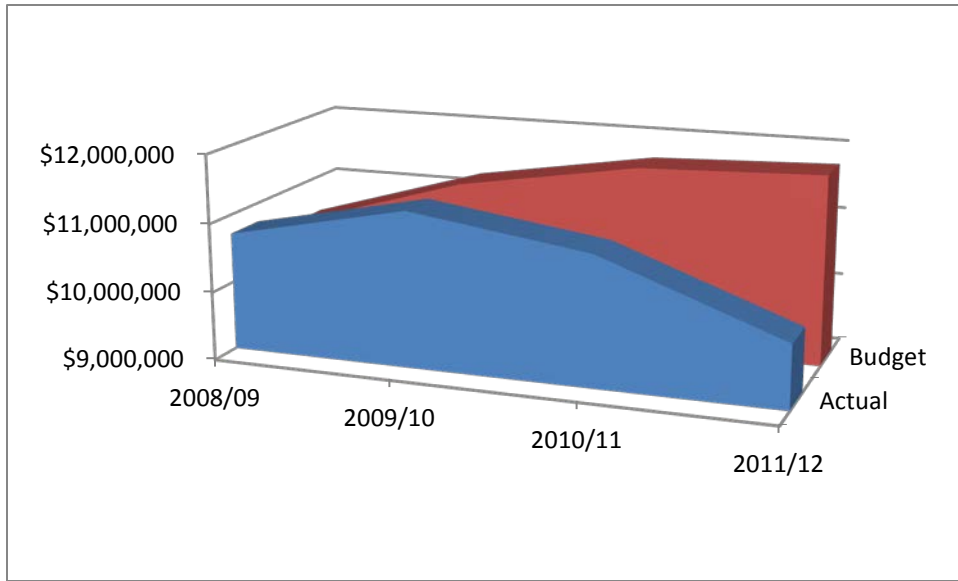
It is important to note that use of renewables (wind and photovoltaic for example) does not impact consumption but it can reduce GHG emissions.

### **Energy Budget and Expenditure**

A four year history of board budgets and expenditures for electricity and gas are presented in Appendix C. The Waterloo Region District School Board utility budget for 2011/12 was \$11.8M and the approved budget for 2012/13 is \$11.4M.

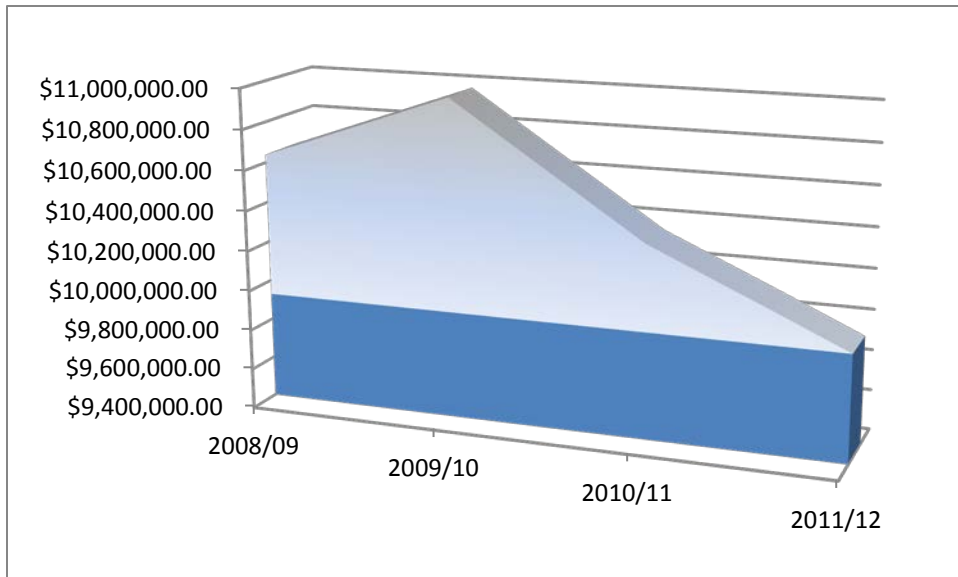
It is important to note when reviewing this information that budget and actual expenses cannot be compared directly year over year as a metric for operational efficiencies. Consumption is weather dependent. Costs are market dependent. Market pricing is something the board has very limited control over and market pricing can fluctuate greatly depending on demand and time of use. Business Services staff employs a purchasing strategy working through a consortium. This minimizes the board's exposure to spot market pricing and was instrumental in generating the savings experienced in 2011/12. Figure 4 presents the board's budget versus expenditures since 2008.

Figure 4 – Budget and Expenditures (Dollars) versus Year



One can estimate cost avoidance by holding energy rates constant at 2011/12 average cost of 5.79 cents per kWh/m<sup>2</sup> and maintaining a fixed inventory of area of schools while applying EUI factors that have reduced over time. Based on this, the area beneath the curve and above the fixed line on Figure 5 represents more than \$2.2M in cost avoidance due to EUI reductions since 2008.

Figure 5 – Cost Avoidance (Dollars) Versus Year



Regardless of our best efforts to reduce consumption by driving down EUI, energy costs are likely to rise in the future.

**Operations**

Operationally, the greatest opportunity that exists for our board to reduce energy consumption is to reduce waste. This means not only shutting it off, but perhaps a different mindset of not turning it on. This involves changing behavioural patterns of all stakeholders including staff and students and the public. We have employed strategies of generating awareness that are focused on turning it off. We need to further focus on not turning it on.

As we construct new or renew older facilities, Business Services staff search for new technologies to implement. More detailed presentations on some topics listed have been provided over the last number of

years to Committee of the Whole, and are listed as a reference. Some of these technologies and sample paybacks are provided for information:

- Energy recovery ventilators – 1 to 2 years
- Variable speed drives – 2 to 4 years
- Occupancy sensors – 2 to 4 years
- Lighting retrofits – 2 to 5 years
- Demand control ventilation – 2 to 5 years
- Building automation systems – 3 to 5 years (presented to Committee of the Whole May 2011)
- Daylight harvesting – 3 to 5 years
- Recommissioning of building systems – 3 to 5 years
- Condensing make-up air rooftops – 4 to 6 years
- Boiler conversions from steam to hot water – 5 to 8 years
- Energy efficient boilers – 6 to 8 years
- Window replacement and upgrades (single to double pane low E) – 10 to 15 years
- Roof replacement and upgrades (R10 to R25) – 15 to 20 years
- Photovoltaic – 18 years at \$0.8/kWh (presented to Committee of the Whole May 2012)

Implementations of these technologies help to reduce consumption. Business Services staff will continue to expand the use such technologies where possible. It should be noted that while technology is a great resource to reduce consumption, our greatest opportunity to leverage reductions is to change behaviours and reduce waste.

Further to the use of technology, implementation of preventative maintenance programs extends the working life of equipment and also helps to reduce energy consumption and therefore use less energy. As such, the implementation of the Computerized Maintenance Management System (CMMS) and development of preventative maintenance programs is a key aspect to reduced consumption within our schools.

It is intended that this report will be shared with the, Elementary Accommodation Committee (EAC), Secondary Accommodation Committee (SAC), and Accommodation Steering Committee (ASC) in an effort to enhance awareness and build a knowledge base and momentum for energy conservation in the schools.

### **Renewables**

The Waterloo Region District School Board received approximately \$1M for five renewable energy projects from the Ministry in 2010/2011. These projects were completed in late 2011 and have generated more than \$62,000 in revenue over 16 months of operation. Appendix D presents a summary of photovoltaic production and revenues.

It is important to recognize that despite generating significant revenue, the payback on the \$1M capital investment under the microfit program at 80 cents per kWh provides an estimated 18 year payback. This time frame would be significantly longer if not subsidized at 80 cents per kWh rate.

### **Incentives and Reinvestment**

In addition to the projects implemented and the saving generated through reduced consumption, the Waterloo Region District School Board has actively sought out incentives programs that generate savings that can be reinvested into schools and help reduce our carbon footprint further.

Since 2009, the board has received more than \$157,000 in incentives from partners that include:

- Union Gas
- Kitchener Hydro
- Reliance Commercial Solutions

In support of school efforts, some of these savings have been reinvested directly to schools for their use in promotion of their EcoSchool status. Appendix E presents the EcoSchool recognition awards for 2010/11 and 2011/12.

### **COMMUNICATIONS:**

The Green Energy Act requires that this information be presented to board and be available publicly on an annual basis. The UCD when available will help to achieve the board's reporting requirements under the Green Energy Act.

**FINANCIAL IMPLICATIONS:**

While the utility budget may represent less than two percent of the overall board budget, the active management of the utility portfolio is required to mitigate risk exposure as cost over runs or savings can have a significant impact on the operating budget.

The utility budget will continue to be monitored and developed on an annual basis within the Business Services Department in consultation with external agencies as required (consortium, Ministry, OMC Energy Sub-Committee), Executive Council, and brought forward through regular budget deliberations.

**STRATEGIC PLAN:**

The six strategic directions that are used to guide the work of the Board are:

- Engaging students, families, staff and communities
- Fostering wellness and well-being
- Pursuing student achievement and success for all
- Embracing diversity and inclusion
- Championing quality public education
- Promoting forward-thinking.

This report relates to the following strategic directions:

- Engaging students, families, staff and communities
- Championing quality public education
- Promoting forward-thinking.

**RECOMMENDATION:**

No recommendation. For information only.

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ANNUAL ENERGY USE INTENSITY - ELEMENTARY SCHOOLS**

*Fiscal Year (Sep to Aug) or Calendar Year (Jan to Dec) as available*

| <b>School</b>          | <b>2008<br/>EkWh/m2</b> | <b>2009/10<br/>EkWh/m2</b> | <b>2010/11<br/>EkWh/m2</b> | <b>2011/12<br/>EkWh/m2</b> |
|------------------------|-------------------------|----------------------------|----------------------------|----------------------------|
| A R Kaufman P.S.       | 212                     | 267                        | 244                        | 234                        |
| Abraham Erb P.S.       | 189                     | 166                        | 173                        | 167                        |
| Alpine P.S.            | 287                     | 330                        | 318                        | 334                        |
| Avenue Road P.S.       | 242                     | 400                        | 331                        | 197                        |
| Ayr P.S.               | 238                     | 292                        | 277                        | 268                        |
| Baden P.S.             | 232                     | 176                        | 168                        | 156                        |
| Blair O.E.C.           | Unavailable             | 297                        | 267                        | 292                        |
| Blair Road P.S.        | 422                     | 249                        | 224                        | 246                        |
| Breslau P.S.           | 336                     | 393                        | 268                        | 267                        |
| Bridgeport P.S.        | 246                     | 241                        | 245                        | 269                        |
| Brigadoon P.S.         | 199                     | 296                        | 213                        | 181                        |
| Cedar Creek P.S.       | 211                     | 206                        | 182                        | 174                        |
| Cedarbrae P.S.         | 289                     | 245                        | 308                        | 264                        |
| Centennial (Camb) P.S. | 269                     | 286                        | 254                        | 363                        |
| Centennial (Wloo) P.S. | 389                     | 264                        | 244                        | 171                        |
| Central P.S.           | 269                     | 294                        | 268                        | 284                        |
| Chalmers Street P.S.   | 265                     | 274                        | 288                        | 316                        |
| Clemens Mill P.S.      | 223                     | 219                        | 206                        | 209                        |
| Conestogo P.S.         | 261                     | 271                        | 252                        | 273                        |
| Coronation P.S.        | 440                     | 378                        | 364                        | 326                        |
| Country Hills P.S.     | 190                     | 224                        | 229                        | 301                        |
| Courtland Senior P.S.  | 246                     | 254                        | 244                        | 219                        |
| Crestview P.S.         | 242                     | 322                        | 299                        | 279                        |
| Dickson P.S.           | 184                     | 183                        | 185                        | 161                        |
| Doon P.S.              | 279                     | 304                        | 281                        | 219                        |
| Driftwood Park P.S.    | 232                     | 199                        | 183                        | 185                        |
| Edna Staebler P.S.     | Not Open                | 171                        | 159                        | 150                        |
| Elgin Street P.S.      | 196                     | 226                        | 204                        | 187                        |
| Elizabeth Ziegler P.S. | 272                     | 278                        | 268                        | 251                        |
| Empire P.S.            | 238                     | 246                        | 239                        | 227                        |
| Floradale P.S.         | 209                     | 191                        | 214                        | 236                        |
| Forest Glen P.S.       | 281                     | 260                        | 240                        | 221                        |
| Forest Hill P.S.       | 316                     | 269                        | 246                        | 248                        |
| Franklin P.S.          | 236                     | 258                        | 233                        | 234                        |
| Glencairn P.S.         | 156                     | 177                        | 182                        | 173                        |
| GrandView (Camb) P.S.  | 230                     | 251                        | 239                        | 143                        |
| Grandview (NH) P.S.    | 197                     | 326                        | 228                        | 233                        |
| Hespeler P.S.          | 206                     | 205                        | 184                        | 166                        |
| Highland P.S.          | 326                     | 281                        | 275                        | 126                        |
| Hillcrest P.S.         | 232                     | 221                        | 209                        | 191                        |
| Howard Robertson P.S.  | 407                     | 343                        | 335                        | 280                        |
| J F Carmichael P.S.    | 217                     | 198                        | 192                        | 183                        |
| J.W. Gerth P.S.        | Not Open                | 125                        | 137                        | 120                        |
| John Darling P.S.      | 179                     | 215                        | 170                        | 171                        |
| John Mahood P.S.       | 323                     | 258                        | 228                        | 221                        |

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ANNUAL ENERGY USE INTENSITY - ELEMENTARY SCHOOLS**

*Fiscal Year (Sep to Aug) or Calendar Year (Jan to Dec) as available*

| <b>School</b>          | <b>2008<br/>EkWh/m2</b> | <b>2009/10<br/>EkWh/m2</b> | <b>2010/11<br/>EkWh/m2</b> | <b>2011/12<br/>EkWh/m2</b> |
|------------------------|-------------------------|----------------------------|----------------------------|----------------------------|
| Keatsway P.S.          | 250                     | 197                        | 172                        | 154                        |
| King Edward P.S.       | 594                     | 268                        | 261                        | 252                        |
| Lackner Woods P.S.     | 192                     | 213                        | 203                        | 210                        |
| Laurelwood P.S.        | 223                     | 235                        | 216                        | 220                        |
| Laurentian P.S.        | 293                     | 321                        | 303                        | 264                        |
| Lester B. Pearson P.S. | 217                     | 173                        | 171                        | 173                        |
| Lexington P.S.         | 307                     | 287                        | 291                        | 261                        |
| Lincoln Avenue P.S.    | 289                     | 358                        | 332                        | 330                        |
| Lincoln Heights P.S.   | 298                     | 258                        | 232                        | 233                        |
| Linwood P.S.           | 356                     | 268                        | 252                        | 273                        |
| MacGregor Sr P.S.      | 201                     | 212                        | 204                        | 201                        |
| MacKenzie King P.S.    | 294                     | 319                        | 299                        | 313                        |
| Manchester P.S.        | 281                     | 316                        | 304                        | 286                        |
| Margaret Avenue P.S.   | 229                     | 285                        | 198                        | 236                        |
| Mary Johnston P.S.     | 174                     | 176                        | 176                        | 175                        |
| McQuarrie Centre       | 539                     | 531                        | 561                        | 411                        |
| Meadowlane P.S.        | 225                     | 271                        | 270                        | 255                        |
| Millen Woods P.S.      | Not Open                | Not Open                   | 196                        | 153                        |
| N A MacEachern P.S.    | 326                     | 338                        | 317                        | 250                        |
| New Dawn               | 412                     | 424                        | 403                        | 430                        |
| New Dundee P.S.        | 188                     | 215                        | 205                        | 209                        |
| Northlake Woods P.S.   | 311                     | 234                        | 241                        | 234                        |
| Park Manor P.S.        | 341                     | 313                        | 284                        | 272                        |
| Parkway P.S.           | 289                     | 260                        | 256                        | 280                        |
| Pioneer Park P.S.      | 236                     | 274                        | 248                        | 255                        |
| Preston P.S.           | 180                     | 188                        | 194                        | 191                        |
| Prueter P.S.           | 169                     | 286                        | 277                        | 219                        |
| Queen Elizabeth P.S.   | 220                     | 252                        | 251                        | 277                        |
| Queensmount Sr P.S.    | 400                     | 309                        | 342                        | 324                        |
| Riverside P.S.         | 171                     | 217                        | 175                        | 175                        |
| Rockway P.S.           | 265                     | 311                        | 281                        | 311                        |
| Rosemount P.S.         | 245                     | 299                        | 287                        | 269                        |
| Ryerson P.S.           | 260                     | 264                        | 246                        | 199                        |
| Saginaw P.S.           | 250                     | 281                        | 248                        | 232                        |
| Sandhills P.S.         | 238                     | 251                        | 226                        | 224                        |
| Sandowne P.S.          | 285                     | 206                        | 221                        | 293                        |
| Sheppard P.S.          | 224                     | 277                        | 268                        | 249                        |
| Silverheights P.S.     | 229                     | 209                        | 203                        | 186                        |
| Sir Adam Beck P.S.     | Not Open                | Not Open                   | 124                        | 164                        |
| Smithson P.S.          | 216                     | 259                        | 249                        | 255                        |
| Southridge P.S.        | 284                     | 318                        | 294                        | 288                        |
| St Andrew's P.S.       | 247                     | 191                        | 196                        | 173                        |
| St Jacobs P.S.         | 236                     | 253                        | 250                        | 235                        |
| Stanley Park P.S.      | 299                     | 331                        | 314                        | 299                        |
| Stewart Avenue P.S.    | 270                     | 306                        | 191                        | 170                        |
| Suddaby P.S.           | 149                     | 197                        | 192                        | 192                        |
| Sunnyside P.S.         | 226                     | 243                        | 218                        | 198                        |



**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ANNUAL ENERGY USE INTENSITY - ELEMENTARY SCHOOLS**

*Fiscal Year (Sep to Aug) or Calendar Year (Jan to Dec) as available*

| <b>School</b>                             | <b>2008</b><br><i>EkWh/m2</i> | <b>2009/10</b><br><i>EkWh/m2</i> | <b>2010/11</b><br><i>EkWh/m2</i> | <b>2011/12</b><br><i>EkWh/m2</i> |
|---|-------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Tait Street P.S.                          | 227                           | 243                              | 241                              | 229                              |
| Three Bridges P.S.                        | 193                           | 200                              | 187                              | 193                              |
| Trillium P.S.                             | 262                           | 342                              | 255                              | 251                              |
| W.T. Townshend P.S.                       | 158                           | 161                              | 156                              | 139                              |
| Wellesley P.S.                            | 243                           | 261                              | 252                              | 242                              |
| Westheights P.S.                          | 309                           | 339                              | 255                              | 232                              |
| Westmount P.S.                            | 244                           | 256                              | 248                              | 223                              |
| Westvale P.S.                             | 151                           | 145                              | 141                              | 128                              |
| William G. Davis P.S.                     | 308                           | 410                              | 331                              | 328                              |
| Williamsburg P.S.                         | 159                           | 149                              | 145                              | 149                              |
| Wilson Avenue P.S.                        | 225                           | 185                              | 234                              | 223                              |
| Winston Churchill P.S.                    | 217                           | 234                              | 216                              | 163                              |
| Woodland Park P.S.                        | 177                           | 191                              | 179                              | 167                              |
| Wrigley's Corners O.E.C.                  | Unavailable                   | 251                              | 225                              | 282                              |
| <b>Energy Intensity Average (EkWh/m2)</b> | <b>258</b>                    | <b>260</b>                       | <b>242</b>                       | <b>231</b>                       |

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ANNUAL ENERGY USE INTENSITY - SECONDARY SCHOOLS**

Fiscal Year (Sep to Aug) or Calendar Year (Jan to Dec) as available

| <b>School</b>  | <b>2008<br/>EkWh/m<sup>2</sup></b> | <b>2009/10<br/>EkWh/m<sup>2</sup></b> | <b>2010/11<br/>EkWh/m<sup>2</sup></b> | <b>2011/12<br/>EkWh/m<sup>2</sup></b> |
|--|------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Bluevale C.I.  | 274                                | 291                                   | 237                                   | 249                                   |
| Cameron Heights C.I.                                 | 385                                | 379                                   | 368                                   | 357                                   |
| Eastwood C.I.  | 211                                | 237                                   | 221                                   | 213                                   |
| Elmira District S.S.                                 | 278                                | 303                                   | 277                                   | 258                                   |
| Forest Heights C.I.                                  | 325                                | 328                                   | 321                                   | 341                                   |
| Galt C.I.  | 254                                | 248                                   | 258                                   | 296                                   |
| Glenview Park S.S.                                   | 275                                | 298                                   | 313                                   | 284                                   |
| Grand River C.I.                                     | 244                                | 283                                   | 264                                   | 246                                   |
| Huron Heights S.S.                                   | 252                                | 280                                   | 282                                   | 264                                   |
| Jacob Hespeler S.S.                                  | 219                                | 281                                   | 290                                   | 250                                   |
| Kitchener-Waterloo C. & V.S.                         | 291                                | 269                                   | 266                                   | 251                                   |
| Preston H.S.   | 260                                | 306                                   | 267                                   | 259                                   |
| Sir John A. Macdonald S.S.                           | 246                                | 257                                   | 242                                   | 240                                   |
| Southwood S.S.                                       | 275                                | 225                                   | 193                                   | 177                                   |
| Waterloo C.I.  | 265                                | 278                                   | 272                                   | 249                                   |
| Waterloo-Oxford District S.S.                        | 243                                | 322                                   | 321                                   | 307                                   |
| <b>Energy Intensity Average (EkWh/m<sup>2</sup>)</b> | <b>269</b>                         | <b>287</b>                            | <b>275</b>                            | <b>265</b>                            |
| <b>Education Centre</b>                              | <b>258</b>                         | <b>280</b>                            | <b>279</b>                            | <b>267</b>                            |

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ENERGY BUDGET AND EXPENDITURES**

| <b>Commodity</b> | <b>2008/09</b>       |                      |
|------------------|----------------------|----------------------|
|                  | <b>Budget</b>        | <b>Actual</b>        |
| Electricity      | \$ 4,616,900         | \$ 5,755,988         |
| Gas              | \$ 5,832,400         | \$ 4,966,345         |
| <b>Total</b>     | <b>\$ 10,449,300</b> | <b>\$ 10,722,333</b> |

| <b>Commodity</b> | <b>2009/10</b>       |                      |
|------------------|----------------------|----------------------|
|                  | <b>Budget</b>        | <b>Actual</b>        |
| Electricity      | \$ 5,733,000         | \$ 6,797,223         |
| Gas              | \$ 5,505,900         | \$ 4,480,301         |
| <b>Total</b>     | <b>\$ 11,238,900</b> | <b>\$ 11,277,524</b> |

| <b>Commodity</b> | <b>2010/11</b>       |                      |
|------------------|----------------------|----------------------|
|                  | <b>Budget</b>        | <b>Actual</b>        |
| Electricity      | \$ 6,759,525         | \$ 6,549,661         |
| Gas              | \$ 4,915,515         | \$ 4,352,896         |
| <b>Total</b>     | <b>\$ 11,675,040</b> | <b>\$ 10,902,557</b> |

| <b>Commodity</b> | <b>2011/12</b>       |                     |
|------------------|----------------------|---------------------|
|                  | <b>Budget</b>        | <b>Actual</b>       |
| Electricity      | \$ 6,809,909         | \$ 6,572,072        |
| Gas              | \$ 4,958,342         | \$ 3,357,832        |
| <b>Total</b>     | <b>\$ 11,768,251</b> | <b>\$ 9,929,904</b> |

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
PHOTOVOLTAIC GENERATION AND REVENUES (LIFETIME)\***

|                      | <b>kWh Production</b> | <b>Revenue</b>   |
|----------------------|-----------------------|------------------|
| Blair Road P.S.      | 15121                 | \$ 12,127        |
| Forest Glen P.S.     | 15802                 | \$ 12,673        |
| Forest Heights C.I.  | 13722                 | \$ 11,005        |
| Lincoln Heights P.S. | 16143                 | \$ 12,947        |
| Waterloo C.I.        | <u>17164</u>          | <u>\$ 13,766</u> |
| <b>Total</b>         | <b>77952</b>          | <b>\$ 62,518</b> |

## Notes:

\* Based on energy produced between November and December 2011 through May 1, 2012.  
Estimates 18 year payback under microfit program, significantly longer if not subsidized.

Links to websites are as follows:

Blair Road P.S. <http://www.cachelan.com/green/solarVuLive.php?ac=blairrdps&dr=dakon>  
 Forest Glen P.S. <http://www.cachelan.com/green/solarVu.php?ac=forestglenps>  
 Forest Heights C.I. <http://www.foresthtsc.solarvu.net/green/solarVu.php?ac=foresthtsc>  
 Lincoln Heights P.S. <http://lincolnhgtsp.solarvu.net/green/solarVuLive.php?ac=lincolnhgtsp&dr=dakon>  
 Waterloo C.I. <http://www.waterlooci.solarvu.net/green/solarVu.php?ac=waterlooci>

**WATERLOO REGION DISTRICT SCHOOL BOARD  
BUSINESS SERVICES DIVISION  
FACILITY SERVICES DEPARTMENT**

**ENERGY UPDATE  
ECOSCHOOLS RECOGNITION AWARDS**

**2011/12 Top 5 EcoSchools**

| <b>School</b>       | <b>Selected Recognition Award</b>             |
|---------------------|---|
| Highland P.S.       | Energy Star LCD Monitor                       |
| New Dundee P.S.     | School Grounds Greening (Trees and Plantings) |
| Forest Hill P.S.    | Bottle Water Hydration Station                |
| Waterloo C.I.       | Bottle Water Hydration Station                |
| Centennial P.S. (C) | Lighting Occupancy Sensors                    |

**2010/11 Top 5 EcoSchools**

| <b>School</b>          | <b>Selected Recognition Award</b>              |
|------------------------|--|
| Glencairn P.S.         | Schools Grounds Greening (Trees and Plantings) |
| Keatsway P.S.          | Bottle Water Hydration Station                 |
| Lester B. Pearson P.S. | Schools Grounds Greening (Trees and Plantings) |
| Southwood S.S.         | Bicycle Stand                                  |
| Westvale P.S.          | Energy Star LCD Monitor                        |