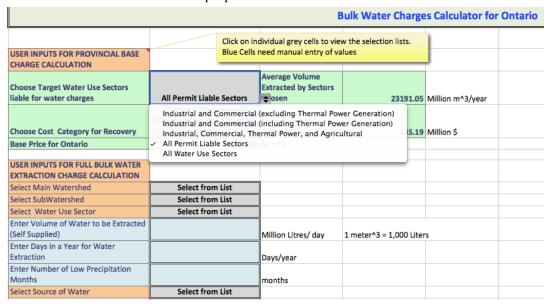
#### **Supplementary Material**

# Demonstration of Water Extraction Charge Calculator using a Hypothetical Permit to Take Water Applicant

#### A. User Defined Inputs for Calculation of Base Provincial Charge

- Water use sectors liable to pay water extraction charges (chosen from drop-down list): All permit liable sectors\*
  - \* in this example, sectors that do not require a permit are exempt i.e. domestic use, livestock/poultry watering, firefighting/other emergency services, wetland conservation or water diversions for construction purposes



Programs to be considered for cost recovery (chosen from drop-down list): All
water resource management costs (including extreme contamination events for
contingency)

|   |   | 1   | Bulk Water Charges Calculator for Ontario | ) |  |
|---|---|---|---|---|--|
| USER INPUTS FOR PROVINCIAL BASE CHARGE CALCULATION  |   | dividual grey cells to vie  |   |   |  |
| Choose Target Water Use Sectors liable for water charges  |   | Average Volume<br>Extracted by Sectors<br>Chosen  | 23191.05 Million m^3/year                 |   |  |
| Choose Cost Category for Recovery   | All Water Management<br>Programs (Quality, Quantity,<br>Contingency)                                  | Total Cost to be  | 535.19 Million \$                         |   |  |
| Base Price for Ontario  | Business as Usual MOECC W   |   |   |   |  |
| USER INPUTS FOR FULL BULK WATER EXTRACTION CHARGE CALCULATION Select Main Watershed Select SubWatershed Select Water Use Sector | Water Resource Mangement Water Resource Managemen  All Water Management Prog Water Resource Managemen | Water Resource Management, Source Water Protection and Clean Water Water Resource Mangement, Source Water Protection, Clean Water, Great Lakes Initiatives Water Resource Management, Source Water Protection, Clean Water, Extreme Contamination Contin All Water Management Programs (Quality, Quantity, Contingency) Water Resource Management, Source Water Protection Program Only Water Resource Management, Source Water Protection, Great Lakes Initiatives |   |   |  |
| Enter Volume of Water to be Extracted (Self Supplied)   |   | Million Litres/ day   | 1 meter^3 = 1,000 Liters                  |   |  |
| Enter Days in a Year for Water Extraction   |   | Days/year   | 2,555 216.5                               |   |  |
| Enter Number of Low Precipitation<br>Months   |   | months  |   |   |  |
| Select Source of Water  | Select from List  |   |   |   |  |

#### B. User defined Inputs for Full Bulk Water Extraction Charge

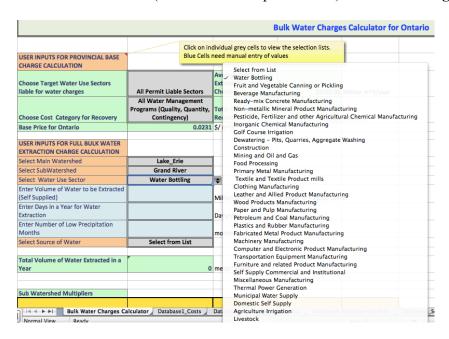
 Main Watershed of the proposed location for extraction (chosen from drop-down list): Lake Erie

|                                       |   |                             | <b>Bulk Water Charge</b> | es Calculator for On | tario |
|---------------------------------------|---|-----------------------------|--------------------------|----------------------|-------|
|                                       |   |                             |                          |                      |       |
|                                       |   | ndividual grey cells to vie |                          |                      |       |
| USER INPUTS FOR PROVINCIAL BASE       | Blue Cell   | need manual entry of v      | alues                    |                      |       |
| CHARGE CALCULATION                    |   |                             |                          | T'                   |       |
|                                       |   | Average Volume              |                          |                      |       |
| Choose Target Water Use Sectors       | All Permit Liable Sectors                           | Extracted by Sectors        |                          |                      |       |
| liable for water charges              | 7 til 1 Cilling Eldale Sections                     | Chosen                      | 23191.05                 | Million m^3/year     |       |
|                                       | All Water Management<br>Programs (Quality, Quantity | Total Cost to be            |                          |                      |       |
| Choose Cost Category for Recovery     | Contingency)  | Recovered                   | E2E 10                   | Million \$           |       |
| Base Price for Ontario                |   | 1 \$/ m^3                   | 555.15                   | Willion \$           |       |
| base Fine for Ontario                 | 0.023   | 4 9/ III 3                  |                          |                      |       |
| USER INPUTS FOR FULL BULK WATER       |   |                             |                          |                      |       |
| EXTRACTION CHARGE CALCULATION         |   |                             |                          |                      |       |
| Select Main Watershed                 | Lake_Erie   | •                           |                          |                      |       |
| Select SubWatershed                   | Select from List                                    |                             |                          |                      |       |
| Select Water Use Sector               | ✓ Lake_Erie   |                             |                          |                      |       |
| Enter Volume of Water to be Extracted | Lake_Ontario  |                             |                          |                      |       |
| (Self Supplied)                       | St_Lawrence_OttawaRiver                             | Million Litres/ day         | 1 meter^3 = 1,000 Lite   | rs                   |       |
| Enter Days in a Year for Water        | Lake_Huron<br>Lake Superior                         |                             |                          |                      |       |
| Extraction                            | Lake_Superior                                       | ays/year                    |                          |                      |       |
| Enter Number of Low Precipitation     |   |                             |                          |                      |       |
| Months                                |   | months                      |                          |                      |       |
| Select Source of Water                | Select from List                                    |                             |                          |                      |       |

2. Sub-watershed of the proposed location (chosen from drop-down list filtered automatically based on input provided in step 1.): **Grand River** 

|   |  | ı  | Bulk Water Charge       | es Calculator for Ontario |  |  |
|---|--|--|-------------------------|---------------------------|--|--|
| USER INPUTS FOR PROVINCIAL BASE                             | Click on individual grey cells to view the selection lists.  OVINCIAL BASE  Blue Cells need manual entry of values |  |                         |                           |  |  |
| CHARGE CALCULATION  |  |  |                         |                           |  |  |
| Choose Target Water Use Sectors<br>liable for water charges | All Permit Liable Sectors  | Average Volume<br>Extracted by Sectors<br>Chosen | 23191.05                | Million m^3/year          |  |  |
| Choose Cost Category for Recovery                           | All Water Management<br>Programs (Quality, Quantity,<br>Contingency)   | Total Cost to be<br>Recovered                    | 535.19                  | Million \$                |  |  |
| Base Price for Ontario                                      | 0.0231   | \$/ m^3  |                         |                           |  |  |
|   |  |  |                         |                           |  |  |
| USER INPUTS FOR FULL BULK WATER                             |  |  |                         |                           |  |  |
| EXTRACTION CHARGE CALCULATION                               |  |  |                         |                           |  |  |
| Select Main Watershed                                       | Lake_Erie  |  |                         |                           |  |  |
| Select SubWatershed   | Grand River  |  |                         |                           |  |  |
| Select Water Use Sector                                     | Select from List   |  |                         |                           |  |  |
| Enter Volume of Water to be Extracted (Self Supplied)       | Essex<br>St. Clair   | Million Litres/ day                              | 1 meter^3 = 1,000 Liter | s                         |  |  |
| Enter Days in a Year for Water<br>Extraction                | Lower Thames<br>Upper Thames   | Days/year  |                         |                           |  |  |
| Enter Number of Low Precipitation<br>Months                 | Kettle Creek Catfish Creek Long point  | months   |                         |                           |  |  |
| Select Source of Water                                      | ✓ Grand River  |  |                         |                           |  |  |

3. The water use sector (chosen from drop-down list): Water bottling



- Volume of water to be extracted (entered manually in Million Liters/day): 3.6
   (Million L/day)
- 5. Days in a year for water extraction (entered manually in days/year): 365 (days/year)
- 6. Number of months of low precipitation (entered manually): 4 (months)

## 7. Source of water extraction (chosen from drop-down list): **Groundwater**

| USER INPUTS FOR PROVINCIAL BASE CHARGE CALCULATION            | Click on inc  | _  |                         |                  |
|---|---|--|-------------------------|------------------|
| Choose Target Water Use Sectors liable for water charges      | All Permit Liable Sectors   | Average Volume<br>Extracted by Sectors<br>Chosen | 23191.05                | Million m^3/year |
| Choose Cost Category for Recovery                             | All Water Management Programs (Quality, Quantity, Contingency)        | Total Cost to be<br>Recovered                    | 535.19                  | Million \$       |
| Base Price for Ontario  | 0.0231  | \$/ m^3  |                         |                  |
| USER INPUTS FOR FULL BULK WATER EXTRACTION CHARGE CALCULATION |   |  |                         |                  |
| Select Main Watershed   | Lake_Erie   |  |                         |                  |
| Select SubWatershed   | Grand River   |  |                         |                  |
| Select Water Use Sector                                       | Water Bottling  |  |                         |                  |
| Enter Volume of Water to be Extracted (Self Supplied)         | 3.6   | Million Litres/ day                              | 1 meter^3 = 1,000 Liter | 's               |
| Enter Days in a Year for Water<br>Extraction                  | 365   | Days/year  |                         |                  |
| Enter Number of Low Precipitation<br>Months                   | 4   | months   |                         |                  |
| Select Source of Water  | Groundwater   | <b>\$</b>  |                         |                  |
| Total Volume of Water Extracted in a<br>Year                  | Select from List Surface Water  Groundwater Both Groundwater and Surf | meter^3/year                                     |                         |                  |

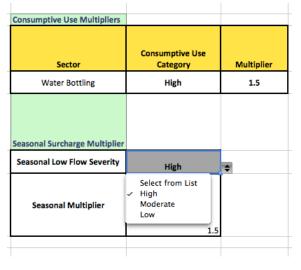
## C. Outputs of Bulk Water Charge Calculator for inputs defined in Steps A and B

| Bulk Water Charges Calculator for Ontario                     |                           |  |                         |                  |  |  |
|---|---------------------------|--|-------------------------|------------------|--|--|
|   | Click on in               |  |                         |                  |  |  |
| USER INPUTS FOR PROVINCIAL BASE CHARGE CALCULATION            | Blue Cells                | J  |                         |                  |  |  |
| Choose Target Water Use Sectors liable for water charges      | All Permit Liable Sectors | Average Volume Extracted by Sectors Chosen | 23191.05                | Million m^3/year |  |  |
| Choose Cost Category for Recovery                             |                           | Total Cost to be<br>Reocvered              |                         | Million \$       |  |  |
| Base Price for Ontario  |                           | \$/ m^3                                    |                         | •                |  |  |
| USER INPUTS FOR FULL BULK WATER EXTRACTION CHARGE CALCULATION | Labo Edo                  |  |                         |                  |  |  |
| Select Main Watershed Select SubWatershed                     | Lake_Erie Grand River     |  |                         |                  |  |  |
| Select Water Use Sector                                       | Water Bottling            |  |                         |                  |  |  |
| Enter Volume of Water to be Extracted (Self Supplied)         | 3.6                       | Million Litres/ day                        | 1 meter^3 = 1,000 Liter | s                |  |  |
| Enter Days in a Year for Water<br>Extraction                  | 365                       | Days/year                                  |                         |                  |  |  |
| Enter Number of Low Precipitation<br>Months                   | 4                         | months                                     |                         |                  |  |  |
| Select Source of Water  | Groundwater               |  |                         |                  |  |  |
| Total Volume of Water Extracted in a<br>Year                  | 1314000                   | meter^3/year                               |                         |                  |  |  |

D. User chooses (yes/no) if the location of water extraction is in the risk identified quaternary watersheds:

|   | Sub Watershed Multipliers                   |   |          |   |                  |
|---|---|---|----------|---|------------------|
|   | Watershed Senstivity Category               | Risk-Selected Quaternary<br>Watersheds                                    | Category | Location Listed in Risk-<br>Selected Quaternary<br>Watershed? | Price Multiplier |
| 1 | High Risk for Surface Water Quantity        | 0   | HIGH     | NO  | 1                |
| 2 | Moderate Risk for Surface Water<br>Quantity | Eramosa Above Guelph,<br>Whitemans Creek, McKenzie<br>Creek               | MODERATE | NO  | 1                |
| 3 | High Risk for <b>Groundwater</b> Quantity   | Central Grand   | HIGH     | NO  | 1                |
| 4 | Moderate Risk for Groundwater<br>Quantity   | Canagagigue Creek, Upper<br>Speed, Mill Creek, Big Creek,<br>Irvine River | MODERATE | YES   | 1.5              |
|   |   |   |          | Select from List  YES NO                                      |                  |

E. User chooses the seasonal severity category for the seasonal surcharge multiplier: (the consumptive use and groundwater use multiplier is calculated automatically based on user inputs in Step B)



| Groundwater Use Multiplier<br>Calculated: |      |
|---|------|
| Groundwater as Main Source                | 1.5  |
| Both GW and SW as Main                    |      |
| Source                                    | 1.25 |
| Surface Water as Main Source              | 1    |

#### F. Special Sector Price Concession Factor:

Here a "Special" sector price concession factor can be entered for a discounted charge, value chosen between 0 (full discount or no charge) and 1 (no discount or full charge).

|   | All Year Final                | l Water Charges |  |              |                 |
|---|-------------------------------|-----------------|--|--------------|-----------------|
| Total Volume Extracted  |                               |                 | <b>Total Volume Extracted</b>                              |              |                 |
| 1314000   | meter^3/year                  |                 | 1314000  | meter^3/year |                 |
| Provincial Base Unit Charge   |                               |                 | <b>Provincial Base Unit Cha</b>                            | arge         |                 |
| 0.0231  | \$/ m^3                       |                 | 0.0231   | \$/ m^3      |                 |
| Price Risk Multiplier (Subwatershed x: 3.375 "Special" Sector Price Concession Factor | Sector x Groundwater Use)  NO |                 | Seasonal Surcharge (Ba<br>5.0625<br>"Special" Sector Price |              | nal multiplier) |
|   |                               | 1 ↓ ♀           | Concession Factor  | NO           | -               |

## G. Final Bulk Water Charges inclusive of All Price Multipliers:

| FIN   | IAL WATER CHARGES IN      | Grand        | d River                                     | SUBWATERSHE          | D                |
|---|---------------------------|--------------|---|----------------------|------------------|
|   | All Year Final W          | ater Charges |   |                      |                  |
| Total Volume Extracted                      |                           |              | Total Volume Extracte                       | d                    |                  |
| 1314000                                     | meter^3/year              |              | 1314000                                     | meter^3/year         |                  |
| Provincial Base Unit Charge                 |                           |              | <b>Provincial Base Unit Ch</b>              | narge                |                  |
| 0.0231                                      | \$/ m^3                   |              | 0.0231                                      | \$/ m^3              |                  |
|   |                           |              |   |                      |                  |
| Price Risk Multiplier (Subwatershed x       | Sector x Groundwater Use) |              | Seasonal Surcharge (Ba                      | ased on add-on seaso | onal multiplier) |
| 3.375                                       |                           |              | 5.0625                                      |                      |                  |
| "Special" Sector Price Concession<br>Factor | NO                        |              | "Special" Sector Price<br>Concession Factor | NO                   |                  |
|   |                           | 1            |   |                      |                  |
|   |                           |              | Enter Price Concession                      |                      | Enter value      |
| Enter Price Concession Factor               |                           | and 1        | Factor                                      |                      | between 0 and 1  |
| Price Multiplier (not adjusted for Seaso    | nal Surcharge)            |              | Price Multiplier (for Low Flow Months)      |                      |                  |
| 3.375                                       | 1                         |              | 5.0625                                      |                      |                  |
|   |                           |              | Number of Low                               |                      |                  |
|   |                           |              | Precipitation Months                        | 4                    |                  |
|   |                           |              | Tota  | l Bulk Water Char    | ge               |
|   |                           |              | Charges for Low                             |                      |                  |
|   |                           |              | Precipitation Months                        | 51172                | \$/ year         |
|   |                           |              | Charges for Normal                          |                      |                  |
|   |                           |              | Precipitation Months                        | 68229                | \$/ year         |
|   |                           |              | TOTAL                                       |                      | \$/ year         |
|   |                           |              | Average Price per m^3                       | for Permit Holder    |                  |
|   |                           |              | 0.0909                                      | \$/m^3               |                  |
|   |                           |              | 90.87                                       | \$/ Million Liters   |                  |

#### Summary

- (1) Total Volume Extracted: 1314000 m<sup>3</sup>/year
- (2) Base Provincial Unit Charge (without any multipliers): CAD 23.08/Million Liters
- (3) Price Multiplier (Location, Sector and Source Risks): 3.375
- (4) Seasonal Surcharge (seasonal multiplier for 4 months): 5.0625
- (5) Unit Water Extraction Charge for permit applicant (inclusive of all multipliers):
  CAD 90.87/Million Liters
- (6) Annual Total Provincial Bulk Water Extraction Charges: \$119400/year