

# LEVELER

## E-Newsletter from the Lake Ontario Riparian Alliance Issue 56 May 24, 2016

Grassroots Public Advocacy for the Protection, Restoration and Conservation of Lake Ontario  
Beaches and Riparian Property

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- Evaluation of International Joint Commission Data -- What we found!  
Plan 2014 will not work.
- Commercial Navigation Notice

Recently, the Lake Ontario Riparian Alliance obtained, from the International Joint Commission (IJC) and its International St. Lawrence River Board of Control (ISLRBC), data sets that included the actual Lake Ontario levels and St. Lawrence River flow rates along with projections of the same if the Lake was under Plan 2014 control.

During our evaluation process, we compared actual Lake Ontario water levels for the high-water periods of 1973, 1993 and 1997. Along with this data comparison, we factored in the times when the IJC and ISLRBC invoked Criterion K, the emergency criterion in Plan 58DD. Criterion K stipulates as follows: "When supplies exceed those of the Past, regulated outflow shall provide all possible relief to riparians upstream and downstream."

We also looked at Plan 2014 "Trigger" levels to see if they would actually work to provide relief, as Criterion K does at present.

Below is our data comparison:

| Quarter<br>Month | 58DD actual |        | 1973<br>2014 |        | 58 DD<br>Criterion K | 2014<br>Trigger |    | Quarter<br>Month | 58DD actual |       | 1973<br>2014 |           | 58 DD<br>Criterion K | 2014<br>Trigger |
|------------------|-------------|--------|--------------|--------|----------------------|-----------------|----|------------------|-------------|-------|--------------|-----------|----------------------|-----------------|
|                  | Meters      | Feet   | Meters       | Feet   |                      |                 |    |                  | Meters      | Feet  | Meters       | Feet      |                      |                 |
| 1                | 74.95       | 245.9  | 75.18        | 246.65 |                      | Y               | 25 | 75.65            | 248.2       | 75.47 | 247.6        |           | N                    |                 |
| 2                | 75.01       | 246.1  | 75.24        | 246.85 |                      | Y               | 26 | 75.6             | 248.03      | 75.42 | 247.44       |           | N                    |                 |
| 3                | 75.04       | 246.19 | 75.28        | 246.98 | K invoked            | Y               | 27 | 75.54            | 247.83      | 75.35 | 247.21       | K revoked | N                    |                 |
| 4                | 75.09       | 246.36 | 75.3         | 247.05 |                      | Y               | 28 | 75.45            | 247.54      | 75.3  | 247.05       |           | N                    |                 |
| 5                | 75.14       | 246.52 | 75.34        | 247.18 |                      | Y               | 29 | 75.39            | 247.34      | 75.26 | 246.92       |           | N                    |                 |
| 6                | 75.23       | 246.82 | 75.34        | 247.18 |                      | Y               | 30 | 75.33            | 247.15      | 75.2  | 246.72       |           | N                    |                 |
| 7                | 75.23       | 246.82 | 75.3         | 247.05 |                      | Y               | 31 | 75.27            | 247.95      | 75.15 | 246.56       |           | N                    |                 |
| 8                | 75.22       | 246.78 | 75.24        | 246.85 |                      | Y               | 32 | 75.21            | 246.75      | 75.1  | 246.39       |           | N                    |                 |
| 9                | 75.18       | 246.65 | 75.22        | 246.78 |                      | Y               | 33 | 75.16            | 246.59      | 75.04 | 246.19       |           | N                    |                 |
| 10               | 75.22       | 246.78 | 75.26        | 246.92 |                      | Y               | 34 | 75.09            | 246.36      | 74.97 | 245.96       |           | N                    |                 |
| 11               | 75.31       | 247.08 | 75.38        | 247.31 |                      | Y               | 35 | 74.99            | 246.03      | 74.92 | 245.8        |           | N                    |                 |
| 12               | 75.44       | 247.51 | 75.48        | 247.64 |                      | Y               | 36 | 74.95            | 245.9       | 74.88 | 245.67       |           | N                    |                 |
| 13               | 75.49       | 247.67 | 75.57        | 247.93 |                      | Y               | 37 | 74.88            | 245.67      | 74.84 | 245.54       |           | N                    |                 |
| 14               | 75.64       | 248.16 | 75.64        | 248.16 |                      | Y               | 38 | 74.85            | 245.57      | 74.8  | 245.41       |           | N                    |                 |
| 15               | 75.68       | 248.29 | 75.64        | 248.16 |                      | Y               | 39 | 74.79            | 245.37      | 74.76 | 245.28       |           | N                    |                 |
| 16               | 75.69       | 248.33 | 75.64        | 248.16 |                      | Y               | 40 | 74.72            | 245.14      | 74.73 | 245.18       |           | N                    |                 |
| 17               | 75.71       | 248.39 | 75.64        | 248.16 |                      | Y               | 41 | 74.71            | 245.11      | 74.7  | 245.08       |           | N                    |                 |
| 18               | 75.72       | 248.43 | 75.62        | 248.1  |                      | Y               | 42 | 74.65            | 244.91      | 74.67 | 244.98       |           | N                    |                 |
| 19               | 75.73       | 248.46 | 75.6         | 248.03 |                      | N               | 43 | 74.63            | 244.85      | 74.66 | 244.95       |           | N                    |                 |
| 20               | 75.74       | 248.49 | 75.6         | 248.03 |                      | N               | 44 | 74.61            | 244.78      | 74.65 | 244.91       |           | N                    |                 |
| 21               | 75.74       | 248.49 | 75.6         | 248.03 |                      | N               | 45 | 74.61            | 244.78      | 74.65 | 244.91       |           | N                    |                 |
| 22               | 75.74       | 248.49 | 75.58        | 247.97 |                      | N               | 46 | 74.61            | 244.78      | 74.66 | 244.95       |           | N                    |                 |
| 23               | 75.71       | 249.39 | 75.54        | 247.83 |                      | N               | 47 | 74.62            | 244.82      | 74.66 | 244.95       |           | N                    |                 |
| 24               | 75.66       | 248.23 | 75.5         | 247.7  |                      | N               | 48 | 74.63            | 244.85      | 74.72 | 245.14       |           | N                    |                 |

| Quarter |             | 1993   |        |        |             |         |       | Quarter     |        | 1993   |        |             |         |  |  |
|---------|-------------|--------|--------|--------|-------------|---------|-------|-------------|--------|--------|--------|-------------|---------|--|--|
| Month   | 58DD actual |        | 2014   |        | 58 DD       | 2014    | Month | 58DD actual |        | 2014   |        | 58 DD       | 2014    |  |  |
|         | Meters      | Feet   | Meters | Feet   | Criterion K | Trigger |       | Meters      | Feet   | Meters | Feet   | Criterion K | Trigger |  |  |
| 1       | 74.86       | 245.6  | 75.02  | 246.13 |             | N       | 25    | 75.36       | 247.24 | 75.44  | 247.51 |             | N       |  |  |
| 2       | 74.98       | 246    | 75.14  | 246.52 |             | Y       | 26    | 75.3        | 247.05 | 75.37  | 247.28 |             | N       |  |  |
| 3       | 75.05       | 246.23 | 75.22  | 246.78 |             | Y       | 27    | 75.24       | 246.85 | 75.29  | 247.01 |             | N       |  |  |
| 4       | 75.12       | 246.46 | 75.27  | 246.95 |             | Y       | 28    | 75.18       | 246.65 | 75.23  | 246.82 | K revoked   | N       |  |  |
| 5       | 75.16       | 246.59 | 75.28  | 246.98 | K invoked   | Y       | 29    | 75.14       | 246.52 | 75.18  | 246.65 |             | N       |  |  |
| 6       | 75.15       | 246.56 | 75.27  | 246.95 |             | Y       | 30    | 75.08       | 246.33 | 75.12  | 246.46 |             | N       |  |  |
| 7       | 75.14       | 246.52 | 75.26  | 246.92 |             | Y       | 31    | 75.02       | 246.13 | 75.05  | 246.23 |             | N       |  |  |
| 8       | 75.17       | 246.62 | 75.24  | 246.85 |             | Y       | 32    | 74.94       | 245.87 | 74.97  | 245.96 |             | N       |  |  |
| 9       | 75.16       | 246.59 | 75.22  | 246.78 |             | Y       | 33    | 74.86       | 245.6  | 74.9   | 245.73 |             | N       |  |  |
| 10      | 75.15       | 246.56 | 75.2   | 246.72 |             | Y       | 34    | 74.82       | 245.47 | 74.84  | 245.54 |             | N       |  |  |
| 11      | 75.13       | 246.49 | 75.2   | 246.72 |             | N       | 35    | 74.76       | 245.28 | 74.75  | 245.2  |             | N       |  |  |
| 12      | 75.12       | 246.46 | 75.23  | 246.92 |             | N       | 36    | 74.68       | 245.01 | 74.68  | 244.95 |             | N       |  |  |
| 13      | 75.18       | 246.65 | 75.3   | 247.05 |             | N       | 37    | 74.66       | 244.95 | 74.65  | 244.91 |             | N       |  |  |
| 14      | 75.28       | 246.98 | 75.44  | 247.51 |             | Y       | 38    | 74.63       | 244.85 | 74.6   | 244.75 |             | N       |  |  |
| 15      | 75.43       | 247.47 | 75.59  | 248    |             | Y       | 39    | 74.58       | 244.72 | 74.56  | 244.62 |             | N       |  |  |
| 16      | 75.56       | 247.9  | 75.7   | 248.36 |             | Y       | 40    | 74.58       | 244.72 | 74.54  | 244.55 |             | N       |  |  |
| 17      | 75.64       | 248.16 | 75.72  | 248.43 |             | Y       | 41    | 74.54       | 244.55 | 74.51  | 344.46 |             | N       |  |  |
| 18      | 75.64       | 248.16 | 75.7   | 248.36 |             | Y       | 42    | 74.52       | 244.49 | 74.5   | 244.42 |             | N       |  |  |
| 19      | 75.62       | 248.1  | 75.68  | 248.29 |             | Y       | 43    | 74.51       | 244.46 | 74.49  | 244.39 |             | N       |  |  |
| 20      | 75.58       | 247.97 | 75.64  | 248.16 |             | Y       | 44    | 74.5        | 244.42 | 74.5   | 244.42 |             | N       |  |  |
| 21      | 75.52       | 247.77 | 75.6   | 248.03 |             | N       | 45    | 74.54       | 244.55 | 74.54  | 244.55 |             | N       |  |  |
| 22      | 75.5        | 247.7  | 75.58  | 247.97 |             | N       | 46    | 74.58       | 244.69 | 74.54  | 244.55 |             | N       |  |  |
| 23      | 75.46       | 247.57 | 75.55  | 247.87 |             | N       | 47    | 74.56       | 244.62 | 74.52  | 244.49 |             | N       |  |  |
| 24      | 75.42       | 247.44 | 75.5   | 247.7  |             | N       | 48    | 74.56       | 244.62 | 74.52  | 244.49 |             | N       |  |  |

| Quarter |             | 1997  |        |        |             |         |       | Quarter     |        | 1997   |        |             |         |  |  |
|---------|-------------|-------|--------|--------|-------------|---------|-------|-------------|--------|--------|--------|-------------|---------|--|--|
| Month   | 58DD actual |       | 2014   |        | 58 DD       | 2014    | Month | 58DD actual |        | 2014   |        | 58 DD       | 2014    |  |  |
|         | Meters      | Feet  | Meters | Feet   | Criterion K | Trigger |       | Meters      | Feet   | Meters | Feet   | Criterion K | Trigger |  |  |
| 1       | 74.78       | 245.3 | 74.96  | 245.93 |             | N       | 25    | 75.26       | 246.92 | 75.35  | 247.21 |             | N       |  |  |
| 2       | 74.78       | 245.2 | 75     | 246.06 |             | N       | 26    | 75.23       | 246.82 | 75.31  | 247.08 |             | N       |  |  |
| 3       | 74.81       | 245.4 | 75.04  | 246.19 | K invoked   | N       | 27    | 75.2        | 246.72 | 75.26  | 246.92 |             | N       |  |  |
| 4       | 74.85       | 245.6 | 75.08  | 246.33 |             | N       | 28    | 75.16       | 246.59 | 75.2   | 247.72 |             | N       |  |  |
| 5       | 74.89       | 245.7 | 75.12  | 246.46 |             | N       | 29    | 75.1        | 246.39 | 75.14  | 246.52 |             | N       |  |  |
| 6       | 74.92       | 245.8 | 75.11  | 246.42 |             | N       | 30    | 75.04       | 246.19 | 75.1   | 246.39 |             | N       |  |  |
| 7       | 74.88       | 245.6 | 75.09  | 246.36 |             | N       | 31    | 75.01       | 246.1  | 75.06  | 246.26 |             | N       |  |  |
| 8       | 74.88       | 245.6 | 75.12  | 246.46 |             | N       | 32    | 74.98       | 246    | 75.03  | 246.16 | K revoked   | N       |  |  |
| 9       | 74.94       | 245.9 | 75.18  | 246.65 |             | N       | 33    | 74.96       | 245.93 | 74.98  | 246    |             | N       |  |  |
| 10      | 74.99       | 246   | 75.22  | 246.78 |             | N       | 34    | 74.88       | 245.67 | 74.92  | 245.8  |             | N       |  |  |
| 11      | 75.03       | 246.2 | 75.22  | 246.78 |             | N       | 35    | 74.86       | 245.6  | 74.88  | 245.67 |             | N       |  |  |
| 12      | 75.02       | 246.1 | 75.25  | 246.88 |             | N       | 36    | 74.82       | 245.47 | 74.86  | 245.6  |             | N       |  |  |
| 13      | 75.08       | 246.3 | 75.3   | 247.05 |             | N       | 37    | 74.83       | 245.51 | 74.85  | 245.57 |             | N       |  |  |
| 14      | 75.14       | 246.5 | 75.36  | 247.24 |             | N       | 38    | 74.8        | 245.1  | 74.81  | 245.44 |             | N       |  |  |
| 15      | 75.18       | 246.7 | 75.38  | 247.31 |             | N       | 39    | 74.76       | 245.28 | 74.75  | 245.24 |             | N       |  |  |
| 16      | 75.2        | 246.7 | 75.4   | 247.38 |             | N       | 40    | 74.68       | 245.01 | 74.7   | 245.08 |             | N       |  |  |
| 17      | 75.24       | 246.9 | 75.44  | 247.51 |             | N       | 41    | 74.65       | 244.91 | 74.68  | 245.01 |             | N       |  |  |
| 18      | 75.3        | 247.1 | 75.5   | 247.7  |             | N       | 42    | 74.66       | 244.95 | 74.68  | 245.01 |             | N       |  |  |
| 19      | 75.36       | 247.2 | 75.52  | 247.77 |             | N       | 43    | 74.64       | 244.88 | 74.65  | 244.91 |             | N       |  |  |
| 20      | 75.37       | 247.2 | 75.5   | 247.7  |             | N       | 44    | 74.61       | 244.78 | 74.63  | 244.85 |             | N       |  |  |
| 21      | 75.34       | 247.2 | 75.46  | 247.57 |             | N       | 45    | 74.61       | 244.78 | 74.63  | 244.85 |             | N       |  |  |
| 22      | 75.32       | 247.1 | 75.42  | 247.44 |             | N       | 46    | 74.61       | 244.78 | 74.62  | 244.82 |             | N       |  |  |
| 23      | 75.28       | 247   | 75.4   | 247.38 |             | N       | 47    | 74.59       | 244.72 | 74.6   | 244.75 |             | N       |  |  |
| 24      | 75.28       | 247   | 75.38  | 247.31 |             | N       | 48    | 74.58       | 244.69 | 74.6   | 244.75 |             | N       |  |  |

## Conclusions reached from tables above:

1. The Lake would have been higher in springtime for these three years with Plan 2014. The risk of damaging spring flooding is over 300% more with Plan 2014 vs. current Plan 58DD.

| Plan         | Amt. of time above 247.0 ft during spring months (March - May) |  |  |  |  |  |  |  |  |  |        |
|--------------|--|--|--|--|--|--|--|--|--|--|--------|
| Modeled 58DD |  |  |  |  |  |  |  |  |  |  | 2.8%   |
| Plan B+      |  |  |  |  |  |  |  |  |  |  | 8%     |
| Plan BV7     |  |  |  |  |  |  |  |  |  |  | 7.8%   |
| Plan 2014    |  |  |  |  |  |  |  |  |  |  | 10.17% |

Note: according to IJC personal the % time above 247 with Plan 2014 in the above scenario is 7.7%. According to our statistician it is 10.17%

**No Criterion K deviations** will be allowed for flooding on shores of Lake Ontario. Emergency deviations will be allowed only for specific problems, as stated above.

2. In 1993, the Lake water levels under Plan 2014 would have been over 6+ inches higher during the Spring Storm Season. The south shore of Lake Ontario was devastated with the current plan. Unimaginable damage would have occurred with Plan 2014!

3. For the entire year of 1997, the Trigger levels were not reached, such that Plan 2014 would have increased damages. Niagara County alone had over \$15 million in damages in 1997, and Criterion K was in effect at the time. No deviations would be allowed under Plan 2014.

4. While it appears that Plan 2014 drops levels faster than 58DD in the fall of these years, this action is, as the adage goes, "too little too late", because the massive damages will have already occurred in the spring when triggers have not been reached to allow deviations.

5. The flow rates associated with Plan 2014 are unrealistic. The plan calls for St. Lawrence River flow rates of 9800+ cms. If this high flow rate were even achievable under current river infrastructure, it would have an immediate impact on commercial navigation by shutting it down. Secondly, flows this high would lead to flooding of Montreal, Canada.

6. In evaluating the data, we have uncovered more data as it concerns the Ottawa River annual freshets. The Ottawa River has no control dams on its system, so the water runs wild until it joins the St. Lawrence River at Montreal.

Plan 2014 only takes into account one week of the annual freshets. Typically, the River normally has two phases of spring runoff, a two-week period in early April, then a second period at the end of April into the beginning of May.

What does this mean? Plan 2014 calls for a very high flow rate of 10,200 cms for week of May 1<sup>st</sup>. If there is an Ottawa River freshet occurring at that time, there is no possibility of a Lake Ontario outflow anywhere near the advertised rate. The actual flow for Lake Ontario would be around 7000 cms, based on our 20+ years of observation. This reduction from the plan flow would lead, in this case, to the lake rising 9 to 10 inches in that week.

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## Commercial Navigation Notice

As noted in the previous article, Plan 2014 calls for St. Lawrence River flows of over 9000 cms, with a maximum rate of 10,200 cms, in the 100-year data simulation that we obtained from the IJC. There are at least eight years where Plan 2014 calls for these high levels of flow. We have additionally learned, as noted, that these flow rates are unrealistic and impractical. This will not lead to lower Lake Ontario levels because they are impossible to achieve without imperiling the safety of commercial navigation or flooding the city of Montreal, Quebec.

As always, the LORA website has all past newsletters posted at:  
<http://www.loranet.org/> and <http://www.loranet.org/levelerarchive/pastissues.htm>