



# **Combined Sewer Overflow Annual Report**

**City of Lakewood, Ohio  
April 29, 2019**

City of Lakewood, Ohio  
CSO Annual Notice for 2018

The City of Lakewood has combined sewer overflows (CSO) on Lake Erie and Rocky River. Public access areas affected by CSOs are unknown. Beginning with the implementation of the CSO public notification in July of 2018, the city has had 29 overflow events, all caused by precipitation. As this is the first year of this rule, there are not previous annual notices to compare this to. Lakewood reports CSO activity monthly to the Ohio EPA.

A summary of (this/these) event(s) is as follows:

| Event            | Location  | Event Start      | Event End        | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|------------------|-----------|------------------|------------------|-------------------|----------------|-----------------|
| 1 <sup>1,2</sup> | LEWS 1070 | 7/23/18 2:20 PM  | 7/23/18 11:10 PM | 0.06              | 8.8            | 0.71            |
|                  | LEWS 1130 | 7/23/18 2:25 PM  | 7/23/18 9:40 PM  | 0.02              | 7.3            |                 |
|                  | LEWS 1225 | 7/23/18 2:25 PM  | 7/23/18 9:45 PM  | 0.14              | 7.3            |                 |
|                  | RRES 1145 | 7/23/18 2:25 PM  | 7/23/18 10:20 PM | 0.04              | 7.9            |                 |
|                  | LEWS 1040 | 7/23/18 2:25 PM  | 7/23/18 10:40 PM | 0.24              | 8.3            |                 |
|                  | LEWS 1035 | 7/23/18 2:35 PM  | 7/23/18 10:25 PM | 0.03              | 7.8            |                 |
|                  | LEWS 1190 | 7/23/18 4:25 PM  | 7/23/18 4:45 PM  | 0.02              | 0.3            |                 |
| 2 <sup>1,2</sup> | RRES 1145 | 7/26/18 5:00 PM  | 7/26/18 7:55 PM  | 0.19              | 2.9            | 1.21            |
|                  | LEWS 1225 | 7/26/18 5:50 PM  | 7/26/18 7:50 PM  | 0.43              | 2.0            |                 |
|                  | LEWS 1040 | 7/26/18 5:50 PM  | 7/26/18 9:35 PM  | 0.38              | 3.8            |                 |
|                  | LEWS 1070 | 7/26/18 5:50 PM  | 7/26/18 10:05 PM | 0.15              | 4.3            |                 |
|                  | LEWS 1035 | 7/26/18 6:00 PM  | 7/26/18 9:10 PM  | 0.69              | 3.2            |                 |
|                  | LEWS 1215 | 7/26/18 6:05 PM  | 7/26/18 7:35 PM  | 0.03              | 1.5            |                 |
|                  | LEWS 1190 | 7/26/18 6:25 PM  | 7/26/18 7:55 PM  | 0.18              | 1.5            |                 |
| 3 <sup>1</sup>   | LEWS 1225 | 7/27/18 10:35 PM | 7/27/18 11:00 PM | 0.09              | 0.4            | 0.35            |
|                  | LEWS 1040 | 7/27/18 10:45 PM | 7/27/18 11:45 PM | 0.07              | 1.0            |                 |
|                  | LEWS 1035 | 7/27/18 10:45 PM | 7/27/18 11:50 PM | 0.01              | 1.1            |                 |
| 4 <sup>1,2</sup> | LEWS 1225 | 8/6/18 10:10 PM  | 8/6/18 11:50 PM  | 0.46              | 1.7            | 1.6             |
|                  | LEWS 1040 | 8/6/18 10:15 PM  | 8/7/18 3:30 AM   | 0.81              | 5.3            |                 |
|                  | LEWS 1215 | 8/6/18 10:20 PM  | 8/6/18 11:25 PM  | 0.04              | 1.1            |                 |
|                  | RRES 1145 | 8/6/18 10:20 PM  | 8/7/18 1:30 AM   | 0.49              | 3.2            |                 |
|                  | LEWS 1035 | 8/6/18 10:20 PM  | 8/7/18 2:45 AM   | 0.89              | 4.4            |                 |
|                  | LEWS 1070 | 8/6/18 10:20 PM  | 8/7/18 3:40 AM   | 0.16              | 5.3            |                 |
|                  | LEWS 1190 | 8/6/18 10:35 PM  | 8/6/18 11:45 PM  | 0.19              | 1.2            |                 |
|                  | LEWS 1045 | 8/6/18 10:35 PM  | 8/7/18 2:10 AM   | 0.04              | 3.6            |                 |
| 5 <sup>1,2</sup> | LEWS 1225 | 8/21/18 5:00 AM  | 8/21/18 3:35 PM  | 0.22              | 10.6           | 0.8             |
|                  | RRES 1145 | 8/21/18 5:05 AM  | 8/21/18 3:50 PM  | 0.16              | 10.8           |                 |
|                  | LEWS 1040 | 8/21/18 5:05 AM  | 8/21/18 4:00 PM  | 0.18              | 10.9           |                 |
|                  | LEWS 1070 | 8/21/18 5:05 AM  | 8/21/18 4:00 PM  | 0.03              | 10.9           |                 |
|                  | LEWS 1130 | 8/21/18 5:10 AM  | 8/21/18 3:55 PM  | 0.02              | 10.8           |                 |

| Event             | Location       | Event Start     | Event End        | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|-------------------|----------------|-----------------|------------------|-------------------|----------------|-----------------|
| 5 <sup>1,2</sup>  | LEWS 1150      | 8/21/18 5:10 AM | 8/21/18 3:55 PM  | 0.37              | 10.8           | 0.8             |
|                   | LEWS 1155      | 8/21/18 5:15 AM | 8/21/18 3:50 PM  | 0.08              | 10.6           |                 |
|                   | LEWS 1035      | 8/21/18 5:15 AM | 8/21/18 4:05 PM  | 0.04              | 10.8           |                 |
| 6 <sup>1,2</sup>  | LEWS 1225      | 8/29/18 2:00 PM | 8/29/18 2:30 PM  | 0.09              | 0.5            | 0.56            |
|                   | RRES 1145      | 8/29/18 2:05 PM | 8/29/18 2:50 PM  | 0.08              | 0.8            |                 |
|                   | LEWS 1150      | 8/29/18 2:05 PM | 8/29/18 3:40 PM  | 0.22              | 1.6            |                 |
|                   | LEWS 1040      | 8/29/18 2:05 PM | 8/29/18 3:55 PM  | 0.15              | 1.8            |                 |
|                   | LEWS 1070      | 8/29/18 2:05 PM | 8/29/18 4:15 PM  | 0.03              | 2.2            |                 |
|                   | LEWS 1155      | 8/29/18 2:10 PM | 8/29/18 3:40 PM  | 0.04              | 1.5            |                 |
|                   | LEWS 1110      | 8/29/18 2:15 PM | 8/29/18 2:50 PM  | 0.02              | 0.6            |                 |
|                   | LEWS 1135      | 8/29/18 2:15 PM | 8/29/18 4:00 PM  | 0.07              | 1.8            |                 |
|                   | LEWS 1130      | 8/29/18 2:20 PM | 8/29/18 6:15 PM  | 0.01              | 3.9            |                 |
|                   | CSO-002        | 8/29/18 3:30 PM | 8/29/18 5:10 PM  | 0.23              | 1.7            |                 |
| 7 <sup>1,2</sup>  | LEWS 1225      | 9/5/18 5:40 PM  | 9/5/18 6:05 PM   | 0.04              | 0.4            | 0.02            |
|                   | RRES 1145      | 9/5/18 5:45 PM  | 9/5/18 6:20 PM   | 0.02              | 0.6            |                 |
|                   | LEWS 1150      | 9/5/18 5:45 PM  | 9/5/18 6:25 PM   | 0.03              | 0.7            |                 |
|                   | LEWS 1155      | 9/5/18 5:50 PM  | 9/5/18 6:20 PM   | 0.01              | 0.5            |                 |
| 8 <sup>1,2</sup>  | LEWS 1040      | 9/6/18 8:05 AM  | 9/6/18 8:30 AM   | 0.01              | 0.4            | 0.09            |
| 9 <sup>1,2</sup>  | LEWS 1070      | 9/9/18 7:20 AM  | 9/10/18 2:35 AM  | 0.27              | 19.3           | 1.87            |
|                   | LEWS 1040      | 9/9/18 12:30 PM | 9/10/18 2:50 AM  | 0.98              | 14.3           |                 |
|                   | LEWS 1135      | 9/9/18 12:40 PM | 9/10/18 2:05 AM  | 0.49              | 13.4           |                 |
|                   | LEWS 1110      | 9/9/18 12:45 PM | 9/10/18 1:15 PM  | 0.57              | 24.5           |                 |
|                   | RRES 1145      | 9/9/18 1:15 PM  | 9/10/18 3:30 AM  | 0.08              | 14.3           |                 |
|                   | LEWS 1150      | 9/9/18 1:20 PM  | 9/10/18 12:10 AM | 1.71              | 10.8           |                 |
|                   | LEWS 1035      | 9/9/18 1:40 PM  | 9/10/18 12:15 AM | 0.40              | 10.6           |                 |
|                   | LEWS 1130      | 9/9/18 1:45 PM  | 9/9/18 11:05 PM  | 0.01              | 9.3            |                 |
|                   | CSO-002        | 9/9/18 2:40 PM  | 9/10/18 3:05 AM  | 3.28              | 12.4           |                 |
|                   | LEWS 1155      | 9/9/18 2:50 PM  | 9/9/18 11:45 PM  | 0.35              | 8.9            |                 |
|                   | LEWS 1225      | 9/9/18 3:35 PM  | 9/9/18 10:45 PM  | 0.04              | 7.2            |                 |
| LEWS 1045         | 9/9/18 3:50 PM | 9/9/18 11:50 PM | 0.15             | 8.0               |                |                 |
| 10 <sup>1</sup>   | LEWS 1110      | 9/11/18 3:40 AM | 9/11/18 7:35 AM  | 0.03              | 3.9            | 0.18            |
| 11 <sup>1</sup>   | LEWS 1150      | 9/21/18 3:20 PM | 9/21/18 3:40 PM  | 0.02              | 0.3            | 0.12            |
|                   | LEWS 1040      | 9/21/18 3:20 PM | 9/21/18 3:45 PM  | 0.01              | 0.4            |                 |
|                   | LEWS 1135      | 9/21/18 3:25 PM | 9/21/18 3:55 PM  | 0.01              | 0.5            |                 |
| 12 <sup>1,2</sup> | LEWS 1040      | 9/24/18 5:35 PM | 9/25/18 4:15 AM  | 0.13              | 10.7           | 0.72            |
|                   | RRES 1145      | 9/24/18 5:40 PM | 9/25/18 4:00 AM  | 0.02              | 10.3           |                 |
|                   | LEWS 1130      | 9/24/18 5:40 PM | 9/25/18 4:25 AM  | 0.01              | 10.8           |                 |
|                   | LEWS 1150      | 9/24/18 5:45 PM | 9/25/18 4:05 AM  | 0.09              | 10.3           |                 |

| Event             | Location         | Event Start       | Event End         | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|-------------------|------------------|-------------------|-------------------|-------------------|----------------|-----------------|
| 12 <sup>1,2</sup> | LEWS 1135        | 9/24/18 5:50 PM   | 9/25/18 4:25 AM   | 0.07              | 10.6           | 0.72            |
| 13 <sup>1</sup>   | LEWS 1225        | 9/25/18 12:10 AM  | 9/25/18 12:30 AM  | 0.02              | 0.3            | 0.72            |
|                   | CSO-002          | 9/25/18 1:40 AM   | 9/25/18 2:45 AM   | 0.07              | 1.1            |                 |
| 14 <sup>1,2</sup> | LEWS 1070        | 9/26/18 2:30 AM   | 9/26/18 8:25 AM   | 0.17              | 5.9            | 1.51            |
|                   | LEWS 1040        | 9/26/18 2:30 AM   | 9/26/18 8:35 AM   | 0.58              | 6.1            |                 |
|                   | LEWS 1180        | 9/26/18 2:35 AM   | 9/26/18 2:55 AM   | 0.19              | 0.3            |                 |
|                   | LEWS 1225        | 9/26/18 2:35 AM   | 9/26/18 5:45 AM   | 0.29              | 3.2            |                 |
|                   | LEWS 1130        | 9/26/18 2:35 AM   | 9/26/18 6:50 AM   | 0.06              | 4.3            |                 |
|                   | RRES 1145        | 9/26/18 2:35 AM   | 9/26/18 6:50 AM   | 0.23              | 4.3            |                 |
|                   | LEWS 1150        | 9/26/18 2:40 AM   | 9/26/18 7:05 AM   | 1.47              | 4.4            |                 |
|                   | LEWS 1035        | 9/26/18 2:40 AM   | 9/26/18 7:15 AM   | 0.80              | 4.6            |                 |
|                   | LEWS 1135        | 9/26/18 2:45 AM   | 9/26/18 8:00 AM   | 0.36              | 5.3            |                 |
|                   | LEWS 1110        | 9/26/18 2:50 AM   | 9/26/18 6:15 AM   | 0.09              | 3.4            |                 |
|                   | LEWS 1155        | 9/26/18 2:50 AM   | 9/26/18 6:50 AM   | 0.31              | 4.0            |                 |
|                   | LEWS 1045        | 9/26/18 3:15 AM   | 9/26/18 6:45 AM   | 0.06              | 3.5            |                 |
|                   | LEWS 1190        | 9/26/18 3:25 AM   | 9/26/18 5:55 AM   | 0.09              | 2.5            |                 |
|                   | CSO-002          | 9/26/18 4:10 AM   | 9/26/18 9:50 AM   | 2.57              | 5.7            |                 |
| 15 <sup>1,2</sup> | LEWS 1225        | 10/6/18 8:05 PM   | 10/7/18 1:30 AM   | 0.12              | 5.4            | 0.78            |
|                   | RRES 1145        | 10/6/18 8:05 PM   | 10/7/18 4:45 AM   | 0.15              | 8.7            |                 |
|                   | LEWS 1070        | 10/6/18 8:10 PM   | 10/7/18 1:25 AM   | 0.05              | 5.3            |                 |
|                   | LEWS 1130        | 10/6/18 8:10 PM   | 10/7/18 2:40 AM   | 0.02              | 6.5            |                 |
|                   | LEWS 1150        | 10/6/18 8:15 PM   | 10/7/18 1:40 AM   | 0.42              | 5.4            |                 |
|                   | LEWS 1040        | 10/6/18 8:15 PM   | 10/7/18 5:00 AM   | 0.17              | 8.8            |                 |
|                   | LEWS 1035        | 10/6/18 8:20 PM   | 10/7/18 1:45 AM   | 0.06              | 5.4            |                 |
|                   | LEWS 1135        | 10/6/18 8:20 PM   | 10/7/18 5:10 AM   | 0.13              | 8.8            |                 |
|                   | LEWS 1155        | 10/6/18 9:00 PM   | 10/7/18 1:30 AM   | 0.08              | 4.5            |                 |
|                   | LEWS 1110        | 10/6/18 9:00 PM   | 10/7/18 1:40 AM   | 0.04              | 4.7            |                 |
| CSO-002           | 10/6/18 10:05 PM | 10/7/18 3:05 AM   | 0.50              | 5.0               |                |                 |
| 16 <sup>1,2</sup> | LEWS 1130        | 10/13/18 12:15 AM | 10/13/18 12:20 PM | 0.02              | 12.1           | 0.87            |
|                   | LEWS 1070        | 10/13/18 12:20 AM | 10/13/18 9:25 AM  | 0.13              | 9.1            |                 |
|                   | LEWS 1040        | 10/13/18 12:20 AM | 10/13/18 10:10 AM | 0.29              | 9.8            |                 |
|                   | LEWS 1135        | 10/13/18 12:25 AM | 10/13/18 9:35 AM  | 0.18              | 9.2            |                 |
|                   | LEWS 1150        | 10/13/18 12:30 AM | 10/13/18 8:20 AM  | 0.44              | 7.8            |                 |
|                   | RRES 1145        | 10/13/18 12:30 AM | 10/13/18 8:20 AM  | 0.04              | 7.8            |                 |
|                   | LEWS 1110        | 10/13/18 1:30 AM  | 10/13/18 4:40 AM  | 0.02              | 3.2            |                 |
|                   | LEWS 1155        | 10/13/18 1:45 AM  | 10/13/18 8:05 AM  | 0.06              | 6.3            |                 |
| CSO-002           | 10/13/18 2:25 AM | 10/13/18 11:45 AM | 1.72              | 9.3               |                |                 |
| 17 <sup>1</sup>   | LEWS 1040        | 10/20/18 2:20 PM  | 10/20/18 7:25 PM  | 0.01              | 5.1            | 0.20            |

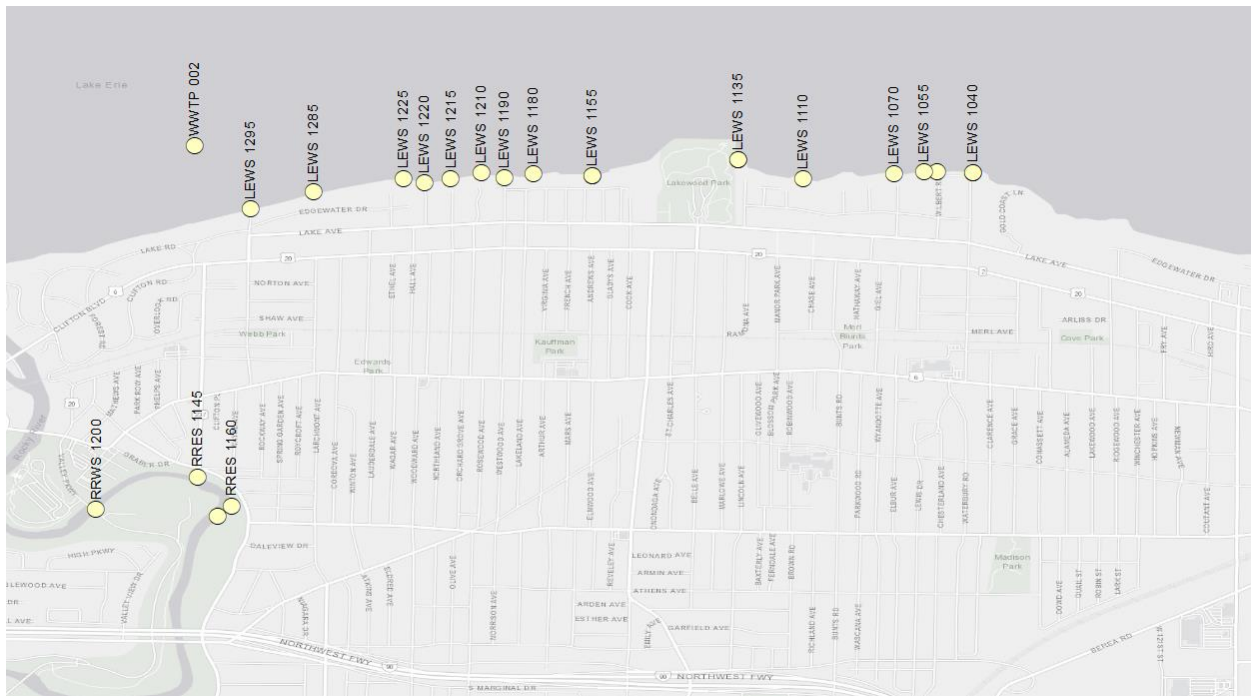
| Event             | Location  | Event Start       | Event End         | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|-------------------|-----------|-------------------|-------------------|-------------------|----------------|-----------------|
| 18 <sup>1,2</sup> | LEWS 1040 | 10/27/18 5:20 PM  | 10/28/18 12:35 AM | 0.08              | 7.3            | 0.66            |
|                   | RRES 1145 | 10/27/18 7:30 PM  | 10/27/18 11:30 PM | 0.01              | 4.0            |                 |
|                   | LEWS 1150 | 10/27/18 7:40 PM  | 10/27/18 9:15 PM  | 0.01              | 1.6            |                 |
|                   | LEWS 1135 | 10/27/18 7:40 PM  | 10/28/18 12:45 AM | 0.04              | 5.1            |                 |
| 19 <sup>1,2</sup> | RRES 1145 | 10/28/18 1:40 PM  | 10/28/18 10:55 PM | 0.08              | 9.3            | 1.14            |
|                   | LEWS 1070 | 10/28/18 1:40 PM  | 10/29/18 1:10 AM  | 0.16              | 11.5           |                 |
|                   | LEWS 1040 | 10/28/18 1:45 PM  | 10/29/18 1:40 AM  | 0.69              | 11.9           |                 |
|                   | LEWS 1150 | 10/28/18 1:55 PM  | 10/29/18 12:05 AM | 1.36              | 10.2           |                 |
|                   | LEWS 1135 | 10/28/18 1:55 PM  | 10/29/18 1:10 AM  | 0.40              | 11.3           |                 |
|                   | LEWS 1035 | 10/28/18 2:05 PM  | 10/29/18 12:00 AM | 0.38              | 9.9            |                 |
|                   | LEWS 1225 | 10/28/18 2:45 PM  | 10/28/18 10:55 PM | 0.23              | 8.2            |                 |
|                   | LEWS 1130 | 10/28/18 2:45 PM  | 10/29/18 1:05 AM  | 0.05              | 10.3           |                 |
|                   | LEWS 1155 | 10/28/18 2:55 PM  | 10/28/18 11:50 PM | 0.28              | 8.9            |                 |
|                   | LEWS 1110 | 10/28/18 2:55 PM  | 10/29/18 1:15 AM  | 0.13              | 10.3           |                 |
|                   | LEWS 1045 | 10/28/18 3:35 PM  | 10/28/18 11:05 PM | 0.06              | 7.5            |                 |
|                   | CSO-002   | 10/28/18 4:00 PM  | 10/29/18 2:35 AM  | 2.69              | 10.6           |                 |
|                   | LEWS 1215 | 10/28/18 9:35 PM  | 10/28/18 10:05 PM | 0.01              | 0.5            |                 |
|                   | LEWS 1190 | 10/28/18 10:00 PM | 10/28/18 10:15 PM | 0.01              | 0.3            |                 |
| 20 <sup>1,2</sup> | LEWS 1040 | 11/1/18 12:40 AM  | 11/3/18 6:05 AM   | 3.53              | 53.4           | 2.3             |
|                   | RRES 1145 | 11/1/18 12:45 AM  | 11/1/18 11:30 PM  | 0.32              | 22.8           |                 |
|                   | LEWS 1135 | 11/1/18 12:50 AM  | 11/3/18 5:45 AM   | 1.26              | 52.9           |                 |
|                   | LEWS 1150 | 11/1/18 1:00 AM   | 11/2/18 1:15 AM   | 4.10              | 24.3           |                 |
|                   | LEWS 1070 | 11/1/18 1:00 AM   | 11/2/18 2:40 AM   | 0.56              | 25.7           |                 |
|                   | LEWS 1110 | 11/1/18 1:00 AM   | 11/3/18 9:30 AM   | 1.06              | 56.5           |                 |
|                   | LEWS 1035 | 11/1/18 1:10 AM   | 11/2/18 1:05 AM   | 1.37              | 23.9           |                 |
|                   | LEWS 1130 | 11/1/18 3:50 AM   | 11/2/18 2:15 AM   | 0.13              | 22.4           |                 |
|                   | CSO-002   | 11/1/18 5:15 AM   | 11/2/18 4:35 AM   | 9.31              | 23.3           |                 |
|                   | LEWS 1155 | 11/1/18 5:40 AM   | 11/2/18 12:45 AM  | 0.93              | 19.1           |                 |
|                   | LEWS 1225 | 11/1/18 7:40 AM   | 11/1/18 11:10 PM  | 0.42              | 15.5           |                 |
|                   | LEWS 1045 | 11/1/18 9:15 AM   | 11/2/18 12:05 AM  | 0.25              | 14.8           |                 |
|                   | LEWS 1190 | 11/1/18 10:10 PM  | 11/1/18 10:50 PM  | 0.03              | 0.7            |                 |
| 21 <sup>1</sup>   | LEWS 1150 | 11/2/18 8:25 PM   | 11/2/18 9:40 PM   | 0.02              | 1.3            | 2.3             |
|                   | CSO-002   | 11/2/18 9:45 PM   | 11/3/18 7:00 AM   | 0.26              | 9.3            |                 |
| 22 <sup>1</sup>   | LEWS 1110 | 11/9/18 8:20 AM   | 11/9/18 11:10 AM  | 0.03              | 2.8            | 0.22            |
| 23 <sup>1</sup>   | LEWS 1110 | 11/15/18 11:45 AM | 11/16/18 1:45 AM  | 0.25              | 14.0           | 0.82            |
|                   | LEWS 1040 | 11/15/18 12:00 PM | 11/15/18 8:40 PM  | 0.11              | 8.7            |                 |
|                   | LEWS 1135 | 11/15/18 12:15 PM | 11/15/18 8:50 PM  | 0.08              | 8.6            |                 |
|                   | CSO-002   | 11/15/18 2:35 PM  | 11/15/18 8:10 PM  | 0.20              | 5.6            |                 |

| Event             | Location         | Event Start       | Event End         | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|-------------------|------------------|-------------------|-------------------|-------------------|----------------|-----------------|
| 24 <sup>1</sup>   | LEWS 1110        | 11/18/18 3:25 PM  | 11/18/18 5:00 PM  | 0.01              | 1.6            | 0.16            |
| 25 <sup>1,2</sup> | LEWS 1040        | 11/26/18 4:05 AM  | 11/26/18 6:40 AM  | 0.13              | 2.6            | 0.56            |
|                   | RRES 1145        | 11/26/18 4:10 AM  | 11/26/18 5:45 AM  | 0.01              | 1.6            |                 |
|                   | LEWS 1150        | 11/26/18 4:15 AM  | 11/26/18 6:10 AM  | 0.13              | 1.9            |                 |
|                   | LEWS 1135        | 11/26/18 4:20 AM  | 11/26/18 6:50 AM  | 0.08              | 2.5            |                 |
|                   | LEWS 1110        | 11/26/18 4:20 AM  | 11/26/18 8:00 AM  | 0.08              | 3.7            |                 |
|                   | CSO-002          | 11/26/18 6:05 AM  | 11/26/18 8:05 AM  | 0.27              | 2.0            |                 |
|                   | LEWS 1110        | 11/26/18 3:10 PM  | 11/27/18 4:15 AM  | 0.18              | 13.1           |                 |
|                   | LEWS 1040        | 11/26/18 3:20 PM  | 11/26/18 7:40 PM  | 0.09              | 4.3            |                 |
|                   | LEWS 1135        | 11/26/18 3:25 PM  | 11/26/18 8:00 PM  | 0.05              | 4.6            |                 |
|                   | CSO-002          | 11/26/18 6:00 PM  | 11/26/18 9:20 PM  | 0.19              | 3.3            |                 |
| 26 <sup>1</sup>   | LEWS 1070        | 12/1/18 2:55 PM   | 12/1/18 5:40 PM   | 0.01              | 2.8            | 0.31            |
|                   | LEWS 1040        | 12/1/18 3:05 PM   | 12/1/18 5:35 PM   | 0.14              | 2.5            |                 |
|                   | LEWS 1150        | 12/1/18 3:10 PM   | 12/1/18 5:05 PM   | 0.14              | 1.9            |                 |
|                   | LEWS 1110        | 12/1/18 3:10 PM   | 12/1/18 6:40 PM   | 0.06              | 3.5            |                 |
|                   | LEWS 1135        | 12/1/18 3:15 PM   | 12/1/18 5:40 PM   | 0.08              | 2.4            |                 |
|                   | CSO-002          | 12/1/18 4:40 PM   | 12/1/18 7:05 PM   | 0.34              | 2.4            |                 |
| 27 <sup>1</sup>   | LEWS 1110        | 12/15/18 9:55 PM  | 12/16/18 12:25 AM | 0.02              | 2.5            | 0.25            |
| 28 <sup>1,2</sup> | LEWS 1070        | 12/20/18 7:40 PM  | 12/21/18 5:30 AM  | 0.08              | 9.8            | 0.73            |
|                   | RRES 1160        | 12/20/18 7:40 PM  | 12/21/18 9:40 AM  | 0.06              | 14.0           |                 |
|                   | RRES 1145        | 12/20/18 7:55 PM  | 12/21/18 5:20 AM  | 0.03              | 9.4            |                 |
|                   | LEWS 1040        | 12/20/18 8:00 PM  | 12/21/18 6:05 AM  | 0.35              | 10.1           |                 |
|                   | LEWS 1135        | 12/20/18 8:10 PM  | 12/21/18 6:00 AM  | 0.19              | 9.8            |                 |
|                   | LEWS 1110        | 12/20/18 8:10 PM  | 12/21/18 9:10 AM  | 0.20              | 13.0           |                 |
|                   | LEWS 1130        | 12/20/18 8:30 PM  | 12/21/18 6:30 AM  | 0.01              | 10.0           |                 |
|                   | LEWS 1150        | 12/20/18 10:15 PM | 12/21/18 5:20 AM  | 0.41              | 7.1            |                 |
|                   | CSO-002          | 12/20/18 10:20 PM | 12/21/18 6:35 AM  | 1.63              | 8.3            |                 |
|                   | LEWS 1035        | 12/20/18 11:45 PM | 12/21/18 2:20 AM  | 0.06              | 2.6            |                 |
| 29 <sup>1,2</sup> | LEWS 1155        | 12/20/18 11:45 PM | 12/21/18 2:20 AM  | 0.07              | 2.6            | 0.85            |
|                   | LEWS 1070        | 12/31/18 12:00 PM | 12/31/18 10:35 PM | 0.15              | 10.6           |                 |
|                   | RRES 1160        | 12/31/18 1:05 PM  | 1/1/19 12:20 AM   | 0.11              | 11.3           |                 |
|                   | RRES 1145        | 12/31/18 1:50 PM  | 12/31/18 5:55 PM  | 0.07              | 4.1            |                 |
|                   | LEWS 1040        | 12/31/18 1:55 PM  | 12/31/18 9:10 PM  | 0.53              | 7.3            |                 |
|                   | LEWS 1110        | 12/31/18 2:00 PM  | 12/31/18 10:55 PM | 0.23              | 8.9            |                 |
|                   | LEWS 1135        | 12/31/18 2:05 PM  | 12/31/18 9:05 PM  | 0.31              | 7.0            |                 |
|                   | LEWS 1150        | 12/31/18 2:15 PM  | 12/31/18 8:15 PM  | 1.04              | 6.0            |                 |
| LEWS 1225         | 12/31/18 3:05 PM | 12/31/18 5:55 PM  | 0.13              | 2.8               |                |                 |
|                   | LEWS 1130        | 12/31/18 3:05 PM  | 12/31/18 9:40 PM  | 0.08              | 6.6            |                 |

| Event                     | Location  | Event Start      | Event End         | Total Volume (MG) | Duration (Hrs) | Total Rain (in) |
|---------------------------|-----------|------------------|-------------------|-------------------|----------------|-----------------|
| 29 <sup>1,2</sup><br>cont | CSO-002   | 12/31/18 3:10 PM | 12/31/18 10:00 PM | 2.23              | 6.8            | 0.85            |
|                           | LEWS 1155 | 12/31/18 3:15 PM | 12/31/18 7:10 PM  | 0.22              | 3.9            |                 |
|                           | LEWS 1035 | 12/31/18 3:15 PM | 12/31/18 7:15 PM  | 0.32              | 4.0            |                 |
|                           | LEWS 1045 | 12/31/18 3:40 PM | 12/31/18 6:40 PM  | 0.06              | 3.0            |                 |

<sup>1</sup> Edgewater Beach – potentially-impacted public access area

<sup>2</sup> Rocky River Marina – potentially-impacted public access area



Above is a map of all of the outfalls.

The City of Lakewood has an Integrated Wet Weather Improvement Plan (IWWIP) that will reduce combined sewer overflow events to four per typical year of rainfall. The plan was submitted March 1, 2019 and currently incorporates the installation of a high rate treatment (HRT) facility for 002, combined sewer overflow storage tanks which discharge to the WWTP once the plant has recovered from the rain event, sewer separation, reducing infiltration to the sewers at both the public and private levels, and increasing permeable surfaces where appropriate. The IWWIP is moving forward with the HRT facility which is currently in construction.

For more information contact Mark Papke, City Engineer, 216.529.6807, [Mark.Papke@lakewoodoh.net](mailto:Mark.Papke@lakewoodoh.net)

The City of Lakewood, operates and maintains its collection system in accordance with the U.S. EPA's 1994 nine minimum controls (*Federal Register / Vol.59, No.75 / Tuesday, April 19, 1994 / Notices Section II B. page18691*). A brief description of the controls and Lakewood's activities for this reporting year follows:

**Control 1—Reducing CSOs Through Operation and Maintenance**

Lakewood continued to implement its operation and maintenance program for the combined sewer collection system, including: cleaning and televising sewer mains, catch basins and manholes.

**Control 2—Storing CSOs in Collection System**

To maximize as much sewage storage as possible in the collection system, the interceptor is filled prior to any CSO discharge. This is routinely done in order to reduce the magnitude, frequency, and duration of CSOs.

**Control 3—Optimizing Pretreatment Program**

Lakewood monitored the industrial pretreatment discharges. This was done to minimize CSO pollutants from the discharges of non-domestic users.

**Control 4—Maximizing Flow through the Treatment Plant**

Lakewood continued to operate the WWTP at its maximum treatable flow rate during wet weather flow conditions. This is routinely done to reduce the magnitude, frequency, and duration of CSOs.

**Control 5—Preventing Dry-Weather Overflows**

There were no dry weather overflows at Lakewood's CSO outfall during this reporting year.

**Control 6—Controlling Solids and Floatables**

Lakewood maintains street sweeping from March-November every year as well as catch basin and sewer main cleaning. Volume over the past year of debris collected was 2,862 cubic yards.

**Control 7—Preventing Pollution of Receiving Water Bodies**

To reduce the impact of CSOs, the first flush during the CSO event(s) is routed to additional treatment capacity at the plant.

**Control 8—Notifying the Public**

In 2018, a public notification process was implemented to inform the EPA, Cuyahoga County Board of Health, and interested citizens when CSOs occur. CSO's are publicly reported here: <http://cso.onelakewood.com/>.

**Control 9—Monitoring CSO Outfalls to Confirm the Effectiveness of CSO Controls**

Lakewood continued to monitor the CSO outfalls to characterize CSO discharges. Monitoring included metering the volume of the CSO discharge, visually inspecting the overflow for floatables, and sampling the initial overflow for pollutant concentrations.