

## Appendix A

### **Sterling Ponds: Wet Pond Discharges to Sumner Creek 2005-2013**

#### **2005:**

During six summer rain events in excess of one inch, the Sterling Ponds wet detention pond discharged warm water (17.9-27.2° C) to the Sumner Creek drainage way, often for extended periods (5-14 hours). Three of these rain events (June 11, July 25, and September 21) were less than 1.5 inches.

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
June 8	1.76 inches	No Data	11 hours
June 11	1.43 inches	No Data	13.5 hours
July 8	4.00 inches	No Data	14 hours
July 25	1.38 inches	No Data	9 hours
Sept. 21	1.49 inches	30 minutes	5 hours
Sept. 24-25	2.49 inches	No Data	14 hours

#### **2006:**

During three summer rain events in excess of 1.5 inches, the Sterling Ponds wet detention pond discharged very warm water (23.4-26.5° C during the July 24 event) to the Sumner Creek drainage way, often for extended periods (4 hours during the July 24 event).

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
July 24	1.80 inches	10 minutes	4 hours
August 2*	2.26 inches	No Data	No Data
August 24*	1.63 inches	No Data	No Data

\*Antecedent rain events occurred on August 1 (1.04 inches) and August 23 (0.71 inches)

#### **2007:**

The Sterling Ponds wet detention pond only discharged to Sumner Creek during the large, back-to-back rain events on August 27 (1.72 inches) and August 28 (1.04 inches), and during the large, intense rain event on September 20 (1.19 inches).

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
August 27	1.72 inches	1 hour	4 hours
August 28	1.04 inches	2.5 hours	3 hours
Sept. 20*	1.19 inches	1 hour	5 hours

\*An antecedent rain event occurred on September 18 (1.64 inches)

**2008:**

The Sterling Ponds wet detention pond only discharged to Sumner Creek during the large, intense rain event on July 25 (1.16 inches).

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
July 25	1.16 inches	20 minutes	3.3 hours

**2009:**

The Sterling Ponds wet detention pond only discharged to Sumner Creek during the very large, intense rain event on August 8 (3.76 inches).

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
August 8*	3.76 inches	None	15 hours

\*An antecedent rain event occurred on August 7 (0.98 inches)

**2010:**

The Sterling Ponds wet detention pond discharged to Sumner Creek during three very large summer rain events in excess of 1.5 inches, and twice during a rain event of unknown magnitude on August 8.

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
June 25*	2.97 inches	50 minutes	2.5 hours
August 8	Unknown	40 minutes	12.5 hours
August 8	Unknown	30 minutes	2.7 hours
August 10-11*	2.43 inches	2 hours	20.0 hours
Sept. 23*	2.58 inches	None	34.5 hours

\*Antecedent rain events occurred on June 23 (1.44 inches), August 8 (>0.55 inch), and September 21-22 (2.04 inches)

**2011:**

The Sterling Ponds wet detention pond discharged to Sumner Creek during two large summer rain events in excess of 1.5 inches, and during a moderate rain event (0.71 inch) on July 16.

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
June 21*	2.46 inches	17.5 hours	18.2 hours
July 16*	0.71 inch	40 minutes	14.7 hours
August 16*	1.78 inches	1.5 hours	16.0 hours

\*Antecedent rain events occurred on June 14-19 (a combined 1.94 inches), July 15 (0.60 inch), and August 13 (1.03 inches)

**2012:**

The Sterling Ponds wet detention pond discharged to Sumner Creek during two large summer rain events in excess of 1.5 inches.

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
May 5-6*	2.27 inches	12.2 hours	14.8 hours
June 20*	2.05 inches	10 minutes	19.3 hours

\*Antecedent rain events occurred on May 1-4 (a combined 1.46 inches) and June 18-19 (a combined 1.34 inches)

**2013:**

The Sterling Ponds wet detention pond discharged to Sumner Creek during two large summer rain events in excess of 1.5 inches, and during a small-moderate rain event (0.44 inch) on June 22.

<u>Date</u>	<u>Rainfall Amount</u>	<u>Discharge Lag</u>	<u>Discharge Time</u>
June 21	1.59 inches	16.2 hours	7.2 hours
June 22*	0.44 inch	10 minutes	1.3 hours
June 26*	2.31 inches	40 minutes	14.7 hours

\*Antecedent rain events occurred on June 21 (1.59 inches) and June 21-23 (a combined 2.32 inches)

**Discharge Lag** is defined as the time lag between the onset of discharge to the infiltration basin and the onset of discharge to Sumner Creek.

**Discharge Time** is the length of time that discharge occurs to Sumner Creek.