

February 22, 2023

Dear Conservation Commission



The enclosed are documents Table 1 , Table 2, Table 3 supporting the reports Carya Documents already submitted on 01/26/23 and 02/09/23 and in support of oral testimony.

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**C-22-14
109R & 131 CLARK LANE
PUBLIC HEARING 01-26-23
EXHIBIT #59**

Table 1: Observed and Calculated Settling Velocities for Various Particle Sizes
(after Yousef et al. 1991, USEPA 1986, TRB 1980)

<i>Particle Diameter (microns)</i>	<i>Average Settling Velocity (cm/sec)</i>
250	4.96
200	3.17
100	0.79
90	0.55
27 - 30	0.059 - 0.070
10 - 14	0.008 - 0.013
6	0.0025
3	0.0007
2	0.00027
1	0.00008

Note: Silt settles at a rate of 0.006 inches per minute to 2.7 inches per minute in a water column.

References

- Yousef A. Yousef et al. 1991. Final Report on Maintenance Guidelines for Accumulated Sediments in Retention/Detention Ponds Receiving Highway Runoff. Florida Department of Transportation, Tallahassee, Florida.
- Sartor & Boyd. 1972. Water Pollution Aspects of Street Surface Contaminants. EA-R2-72-081. EPA Washington, D.C.
- USEPA 1986. Methodology for Analysis of Detention Basins for Control of Urban Runoff Quality. USEPA 440/5-87-001. Washington, D.C.

Table 2: Soil Textural Classifications
(after Donahue et al. 1977)

<i>Soil Classification or Separate</i>	<i>Diameter Range (microns)</i>
<i>Gravel</i>	>2000
<i>Very coarse sand</i>	1000 - 2000
<i>Coarse sand</i>	500 - 1000
<i>Medium sand</i>	250 - 500
<i>Fine sand</i>	100 - 250
<i>Very fine sand</i>	50 - 100
<i>Silt</i>	2 - 50
<i>Clay</i>	<2

Notes: Corresponds to USDA particle size ranges

**Table 3: Percentages of Suspended Solids in Urban Runoff
per Particle Size Categories**

(After Rexnord, Inc, 1984 as reported in Yousef et al 1991)

<i>Particle Size Category (microns)</i>	<i>% Suspended Solids ¹</i>	<i>% finer</i>
<i>>250</i>	6.45	93.55
<i>88 - 250</i>	6.02	87.53
<i>44 - 88</i>	9.08	78.45
<i><44</i>	78.45	

¹ average of mean values from four separate studies in Wisconsin, Pennsylvania, California and North Carolina

References

Yousef A. Yousef et al. 1991. Final Report on Maintenance Guidelines for Accumulated Sediments in Retention/Detention Ponds Receiving Highway Runoff. Florida Department of Transportation, Tallahassee, Florida.