

City of Winter Park

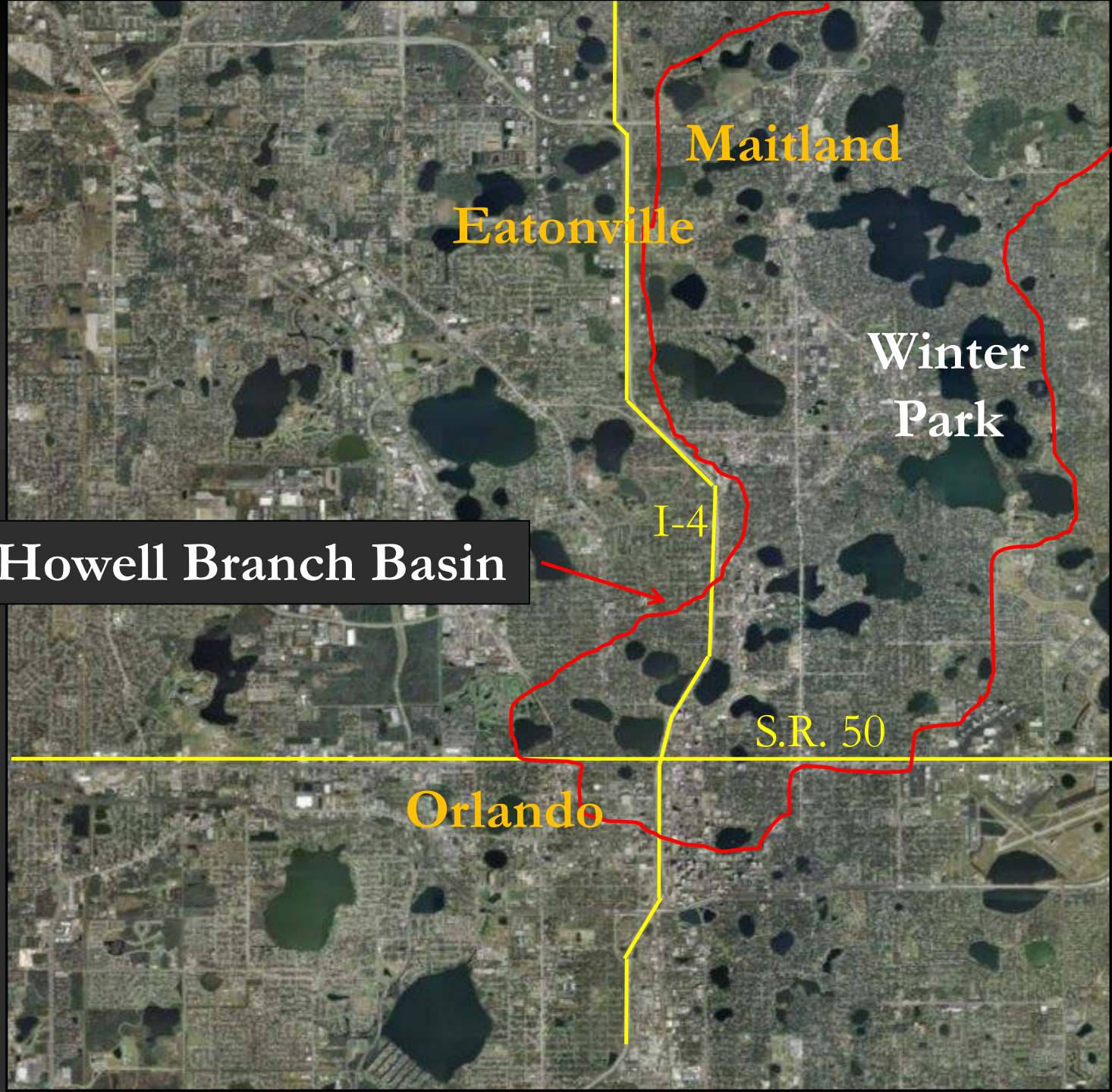
2014 Lake Jesup BMAP Update



City of Winter Park



Howell Branch Basin



Winter Park Surface Water Facts

- 23 lakes and ponds in about 9 square miles of land area
- 7 lakes in W.P. within Howell Branch flow path or connected by ditch, pipe or canal
- 1440 inlets, 134 outfalls
- >3000 acres drain to lakes in the chain
- Entire drainage basin within or entering City is 17 sq. miles



W.P. Chain of Lakes



Navigable
Canal

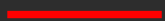


Stream
Inflow

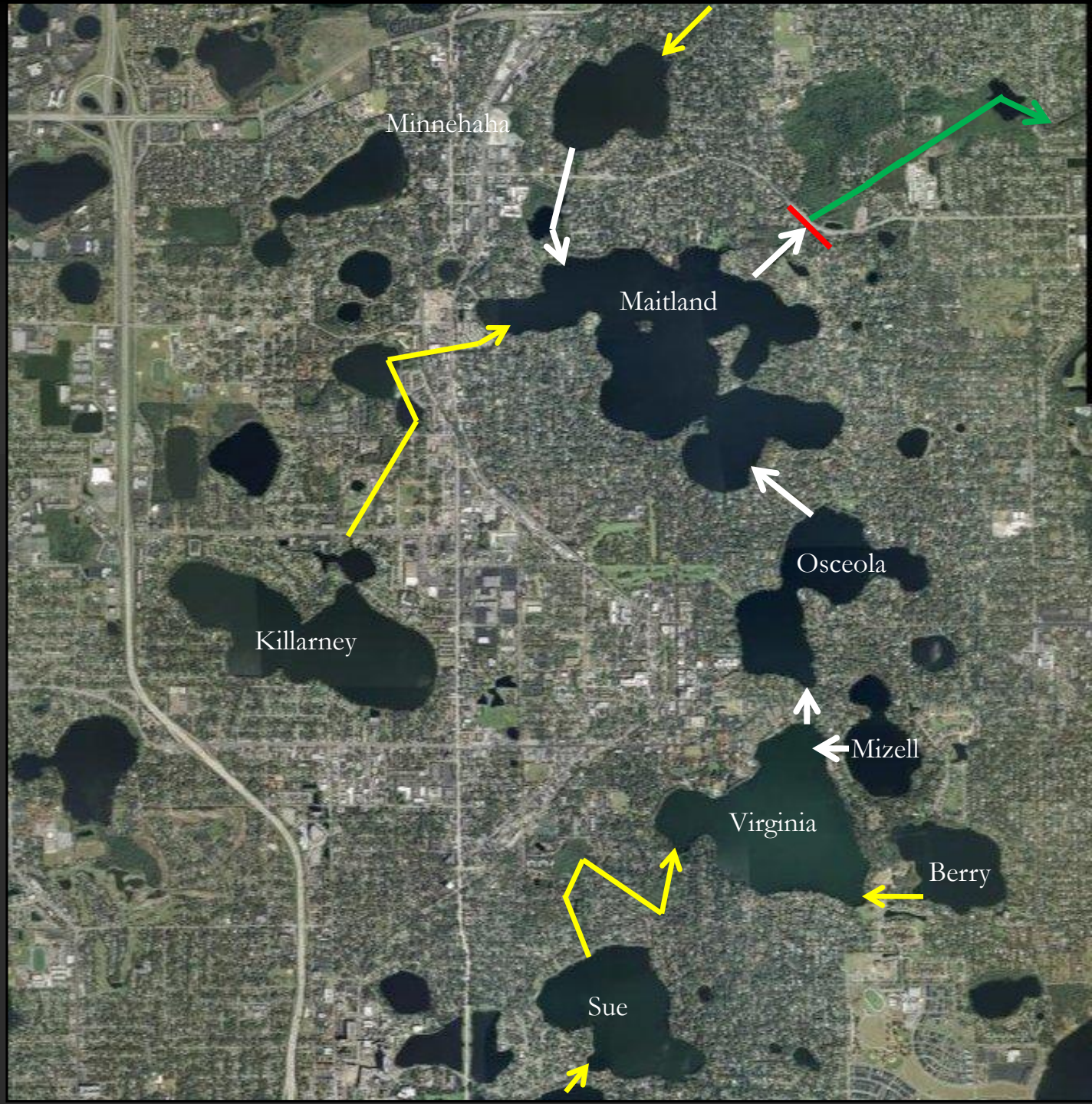


Stream
Outflow

(Arrows indicate
direction of flow)



Outfall
Weir



New Retrofit Installations

Park North Exfiltration

- 8.8 acre sub-basin
- 9.7 lbs. P removal/yr



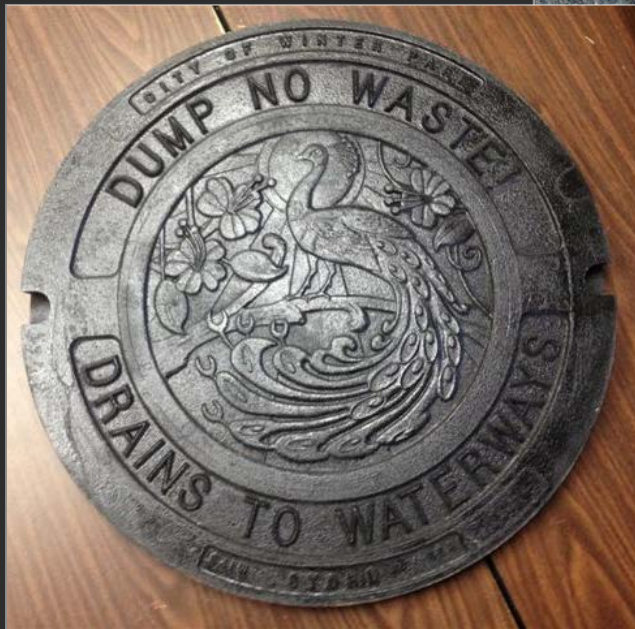
Canton Avenue Baffle Box

- 23 acre sub-basin
- 6.6 lbs. P removal/yr

Public Education

Field Markers

- Approximately 70% of system marked at any given time



Schools & Public Events

- 7 school events
- 1 special event
- 1 workshop
- > 400 total participants

Newsletter & Website

- 1 issue, mailed to over 11,800 recipients
- Website recently expanded: 1,270 hits on stormwater related pages

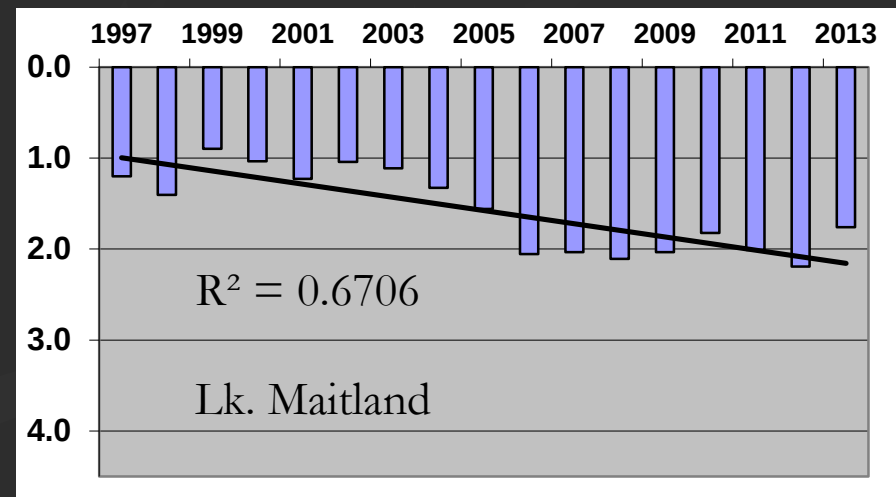
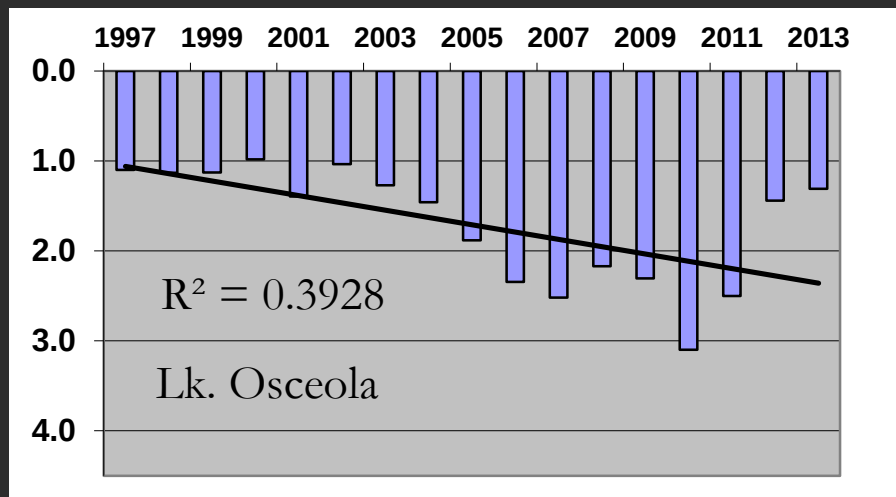
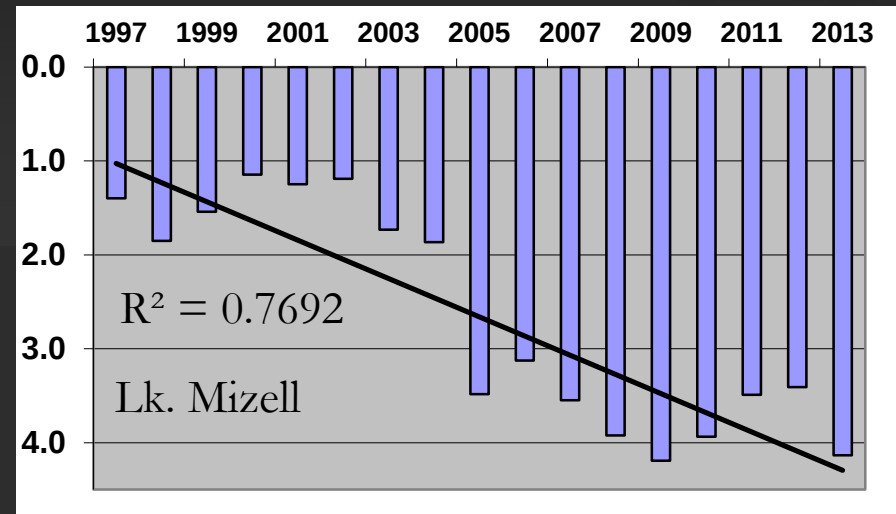
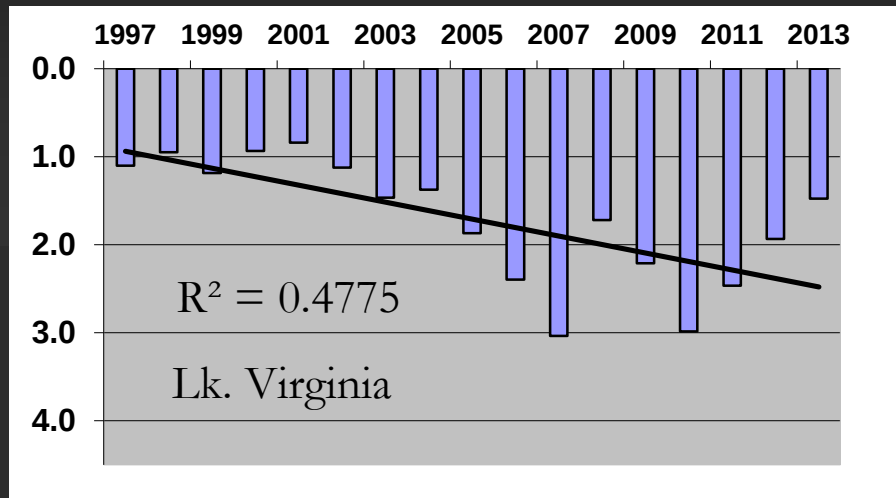
Operation & Maintenance

- Retrofit Maintenance
 - 247 maintenance events
 - 389 cubic yards removed
- Street Sweeping
 - Bi-weekly
 - 6,240 curb miles last permit yr.
 - 1,481 tons collected
- Conveyance System Maint.
 - 2,189 maintenance events (canals, ditches, pipes, inlets, outfalls)
 - 1,157 cubic yards removed



Annual Average Clarity 1991 through 2013

Secchi Disk Transparency in Meters



Nutrient Levels

Chl a (mg/L) - FL NNC Standard 0.020 mg/L (Clear, Alkaline Lakes)

Year Lake	Virginia	Mizell	Osceola	Maitland	Sue	Berry	Killarney	Baldwin
2011	0.004	0.003	0.005	0.006	0.009	0.006	0.013	0.010
2012	0.005	0.002	0.008	0.006	0.016	0.010	0.008	0.005
2013	0.007	0.001	0.007	0.005	0.010	0.009	0.014	0.002

TP (mg/L) - FL NNC Standard 0.030 mg/L (Clear, Alkaline Lakes)

Year Lake	Virginia	Mizell	Osceola	Maitland	Sue	Berry	Killarney	Baldwin
2011	0.019	0.020	0.018	0.022	0.020	0.025	0.024	0.015
2012	0.015	0.006	0.011	0.015	0.020	0.022	0.023	0.016
2013	0.013	0.007	0.010	0.013	0.013	0.016	0.020	0.011

TN (mg/L) - FL NNC Standard 1.05 mg/L (Clear, Alkaline Lakes)

Year Lake	Virginia	Mizell	Osceola	Maitland	Sue	Berry	Killarney	Baldwin
2011	0.33	0.28	0.30	0.31	0.42	0.40	0.49	0.44
2012	0.33	0.24	0.45	0.35	0.60	0.52	0.53	0.44
2013	0.50	0.37	0.51	0.53	0.55	0.52	0.75	0.41



BMAP Monitoring

Howell Branch Road Site

	Ammonia	NOx	TN	SRP	TP	Chl a	BOD5
Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
06/12/13	0.003	0.009	0.432	0.001	0.008	0.018	2.8
07/17/13	0.052	0.008	0.376	0.005	0.016	0.011	2.4
08/15/13	0.003	0.009	0.357	0.002	0.014	0.009	1.9
09/18/13	0.023	0.005	0.492	0.005	0.011	0.006	2.2
10/23/13	0.003	0.008	0.653	0.013	0.014	0.009	2.8
11/20/13	0.003	0.003	0.478	0.005	0.019	0.012	3.8
12/18/13	0.003	0.006	0.537	0.007	0.015	0.009	1.2
01/15/14	0.043	0.007	0.503	0.010	0.022	0.008	1.8
02/12/14	0.029	0.005	0.326	0.001	0.019	0.005	1.8
03/12/14	0.021	0.007	0.328	0.001	0.013	0.003	2.4
04/15/14	0.038	0.156	0.386	0.013	0.014	0.005	1.1
05/14/14	0.008	0.079	0.444	0.001	0.013	0.005	1.7
Mean					0.015		

Data analysis performed by Environmental Research and Design, Inc.



Questions?

www.cityofwinterpark.org/lakes