

Supporting Information

Concentrations and Loads of Dissolved and Particulate Organic Carbon in Urban Stormwater Runoff

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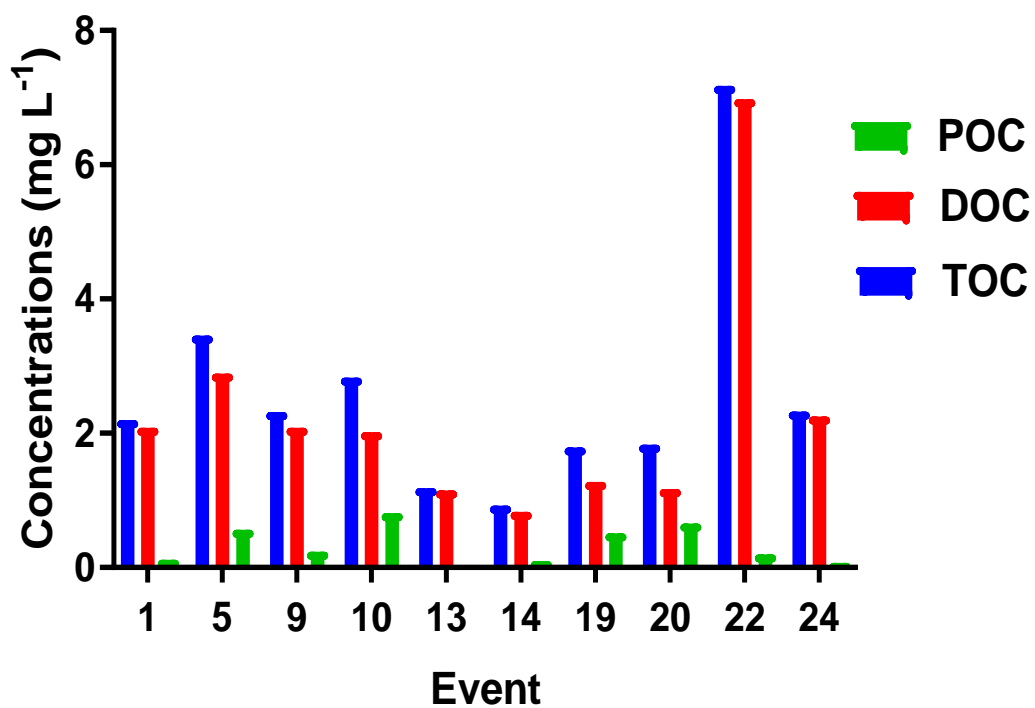
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S1 Figure. Detailed land use of residential catchment in Manatee County, Florida, United States. The location map of the catchment was made by using ArcGIS 10.3.1 version.

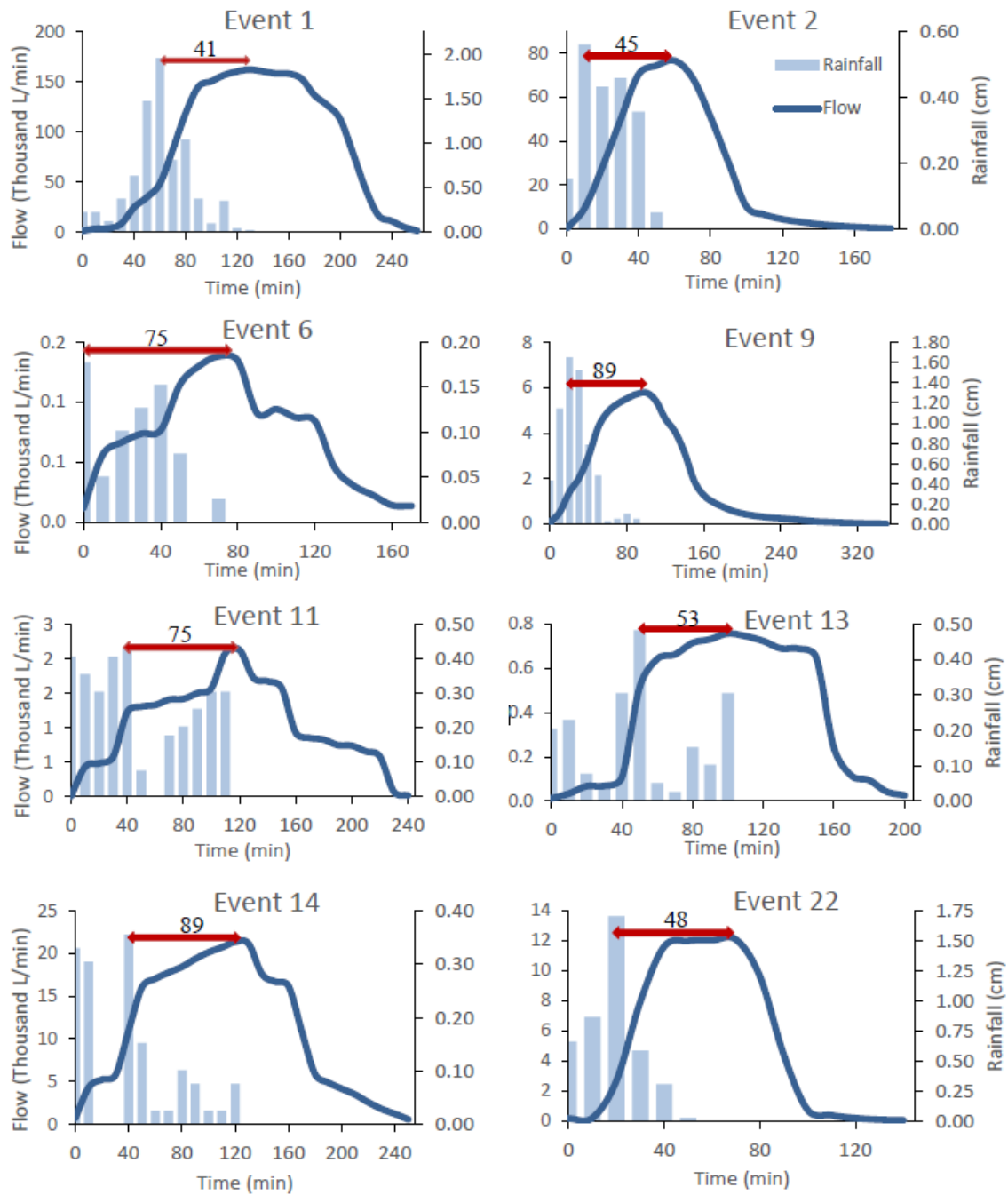
(A)



S2 Figure. Concentrations of TOC, DOC, and POC in rainfall samples collected in 10 storm events from May to September, 2016.



S3 Figure. Temporal relationship among DOC, POC, flow, and rainfall during the longest eight storm events between June to September. The primary y-axis displays DOC and POC concentrations in stormwater runoff, the secondary y-axis displays daily flow, the primary x-axis displays the duration of the event, and the secondary x-axis displays rainfall.



S4 Figure. Stormwater hydrographs for the eight longest storm events during the 2016 wet season. Red arrow shows the hydrograph lag time in minutes.

Table S1. Pervious and impervious areas in the residential catchment.

Land use	Area	
	ha	% of total area
Green space (Tree canopy)	0.24	6.2
Lawn (Turfgrass)	1.98	50.9
Single-family homes (rooftops, patios, driveways)	0.72	18.5
Roads and sidewalks	0.95	24.4
Pond	0.85	—
Total pervious area (tree canopy, grass)	2.22	57.1
Total impervious area (roofs, roads)	1.67	42.9
Total area	3.89	100.0

Table S2. Rainfall and flow characteristics in 25 storm events during the 2016 wet season.

	Rainfall Amount (cm)	Rainfall Intensity (cm/h)	Event Duration (min)	Flow Amount (m³)
Total	44.1	—	—	6,684.89
Mean	—	0.18	118	267.40
Minimum	0.08	0.01	10	1.39
Maximum	7.80	2.92	160	639.05
Wet Season	105.1	—	—	21,540.03

Table S3. Concentrations of DOC in stormwater runoff in this study and previous studies from Florida, United States.

Type of Flow/ Water body	Land Use	Location	DOC Mean Concentration (mg L ⁻¹)	Drainage Area (km ²)	Citation
<i>Stormwater runoff</i>	<i>Urban Residential Catchments</i>	<i>FL, USA</i>	10.5	0.04	<i>This study</i>
Alafia River, FL	River watershed	FL, USA	5.0	—	Chen et al. [35]
Apalachicola	River Watershed	FL, USA	6	49,728	Tian et al. [28]
Canal C-111 at S- 177, FL	Canal	FL, USA	6.6	—	McPherson et al. [34]
Tamiami Canal, FL	Canal	FL, USA	9.5	—	McPherson et al. [34]
Peace River Arcadia, FL	River watershed	FL, USA	15.0	—	McPherson et al. [34]
Kissimmee River at S-65E, FL	River watershed	FL, USA	16.0	—	McPherson et al. [34]
Caloosahatchee River, FL	River watershed	FL, USA	16.0	—	McPherson et al. [34]
Hillsboro Canal at S-6, F	Canal	FL, USA	34.0	—	McPherson et al. [34]