

ROSEDALE RUNOFF REDUCTION PROJECT OAKWOOD – BATAVIA GREEN INFRASTRUCTURE

PROJECTED PERFORMANCE ANALYSIS
FOR NINE MILE RUN WATERSHED ASSOCIATION
DRAFT 11/8/2016

objective

- Assess the **total storage capacity** of the Oakwood – Batavia stormwater (SW) planters as built
- Understand likely **total volume captured and retained** by SW planters annually
- Compare the likely **cost per annual gallon removed** from the combined sewer





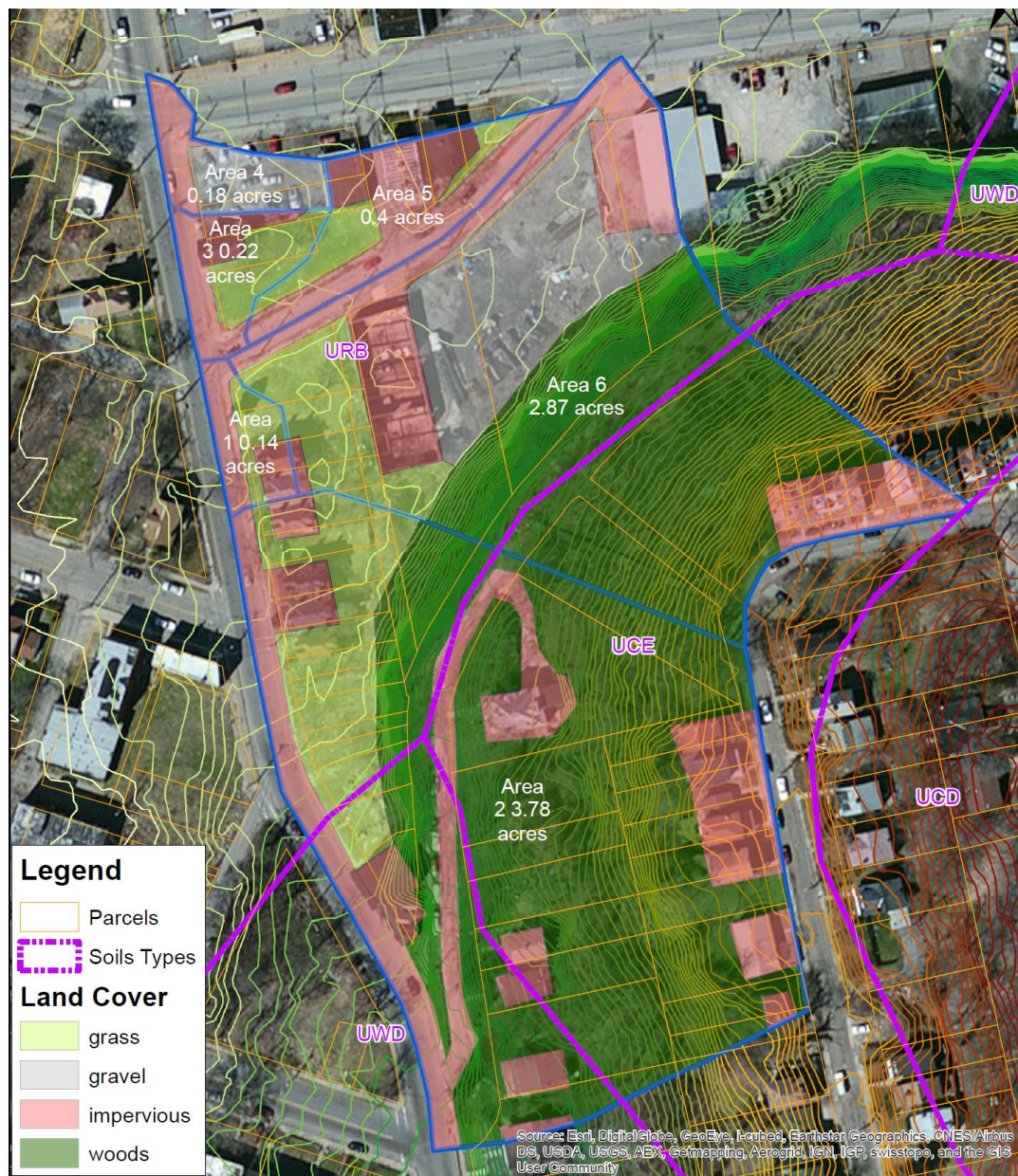
approach

- Adjust original design volumes based on as-built conditions:
- Things that changed:
 - Eliminated one of two curb bump-outs on Oakwood
 - Moved R-Tank to the north side of Batavia, changing the footprint of area available for infiltration.
 - Replaced some of R-Tank doubles with singles to work around bedrock encountered at the eastern end of the Batavia.
 - Increase in final ponding depth of some of the planter cells

approach

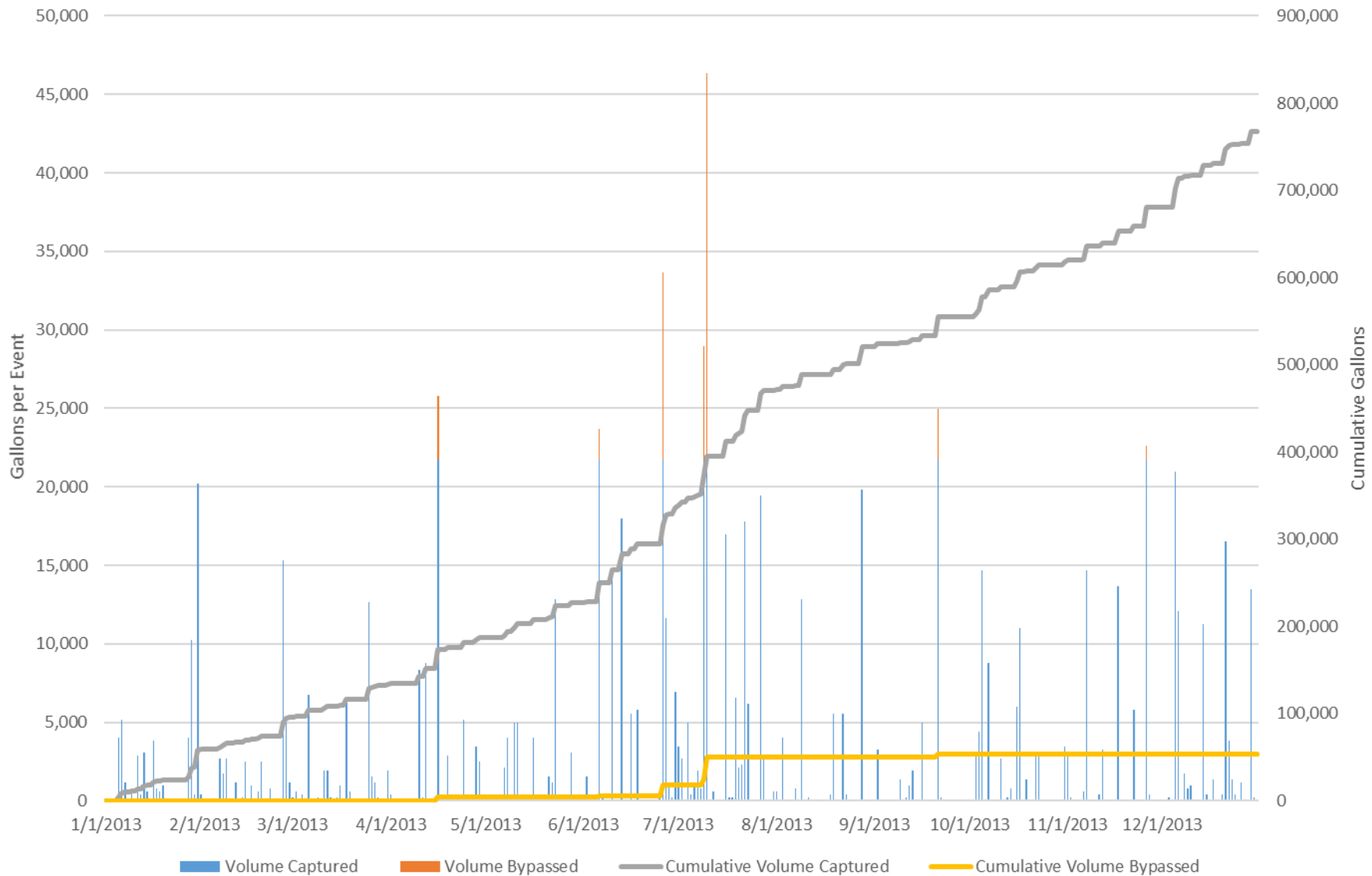
- Use Small Storm Hydrology Method to estimate runoff from the watershed
- Evaluate a range of potential runoff volumes based on two test cases:
 - Conservative Capture: Only evaluate runoff from 0.78 acres of impervious areas assumed to be directly connected to the GI facility
 - Upper Bound Capture: Include all likely runoff from the entire 6.79 ac assumed to be ultimately draining to the GI facility
- Evaluate watershed runoff, GI facility capture, and bypass with daily precipitation from years 2013, 2014, & 2015

ethos
collaborative
water-energy-climate-community

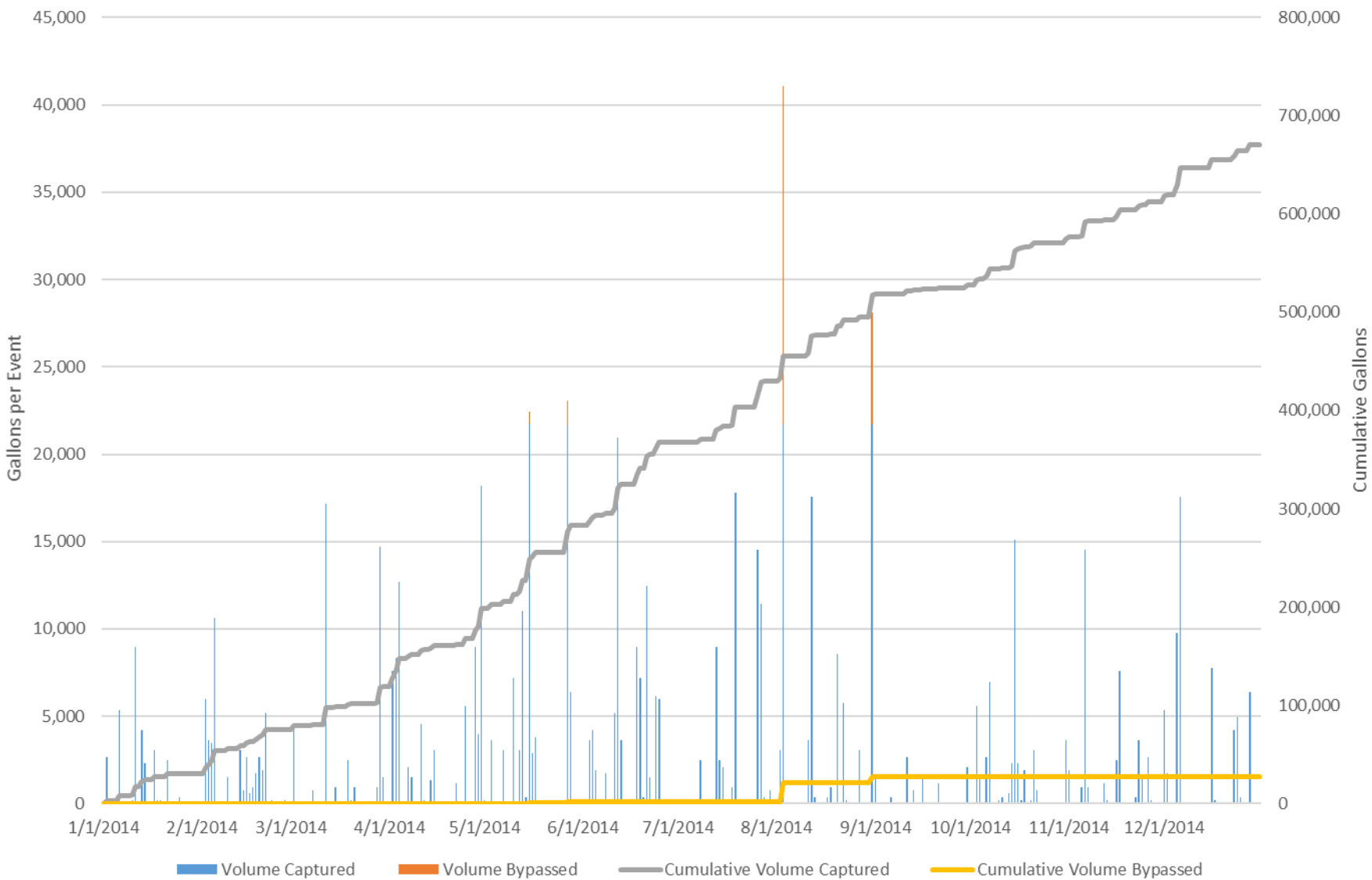


Oakwood-Batavia Drainage Areas

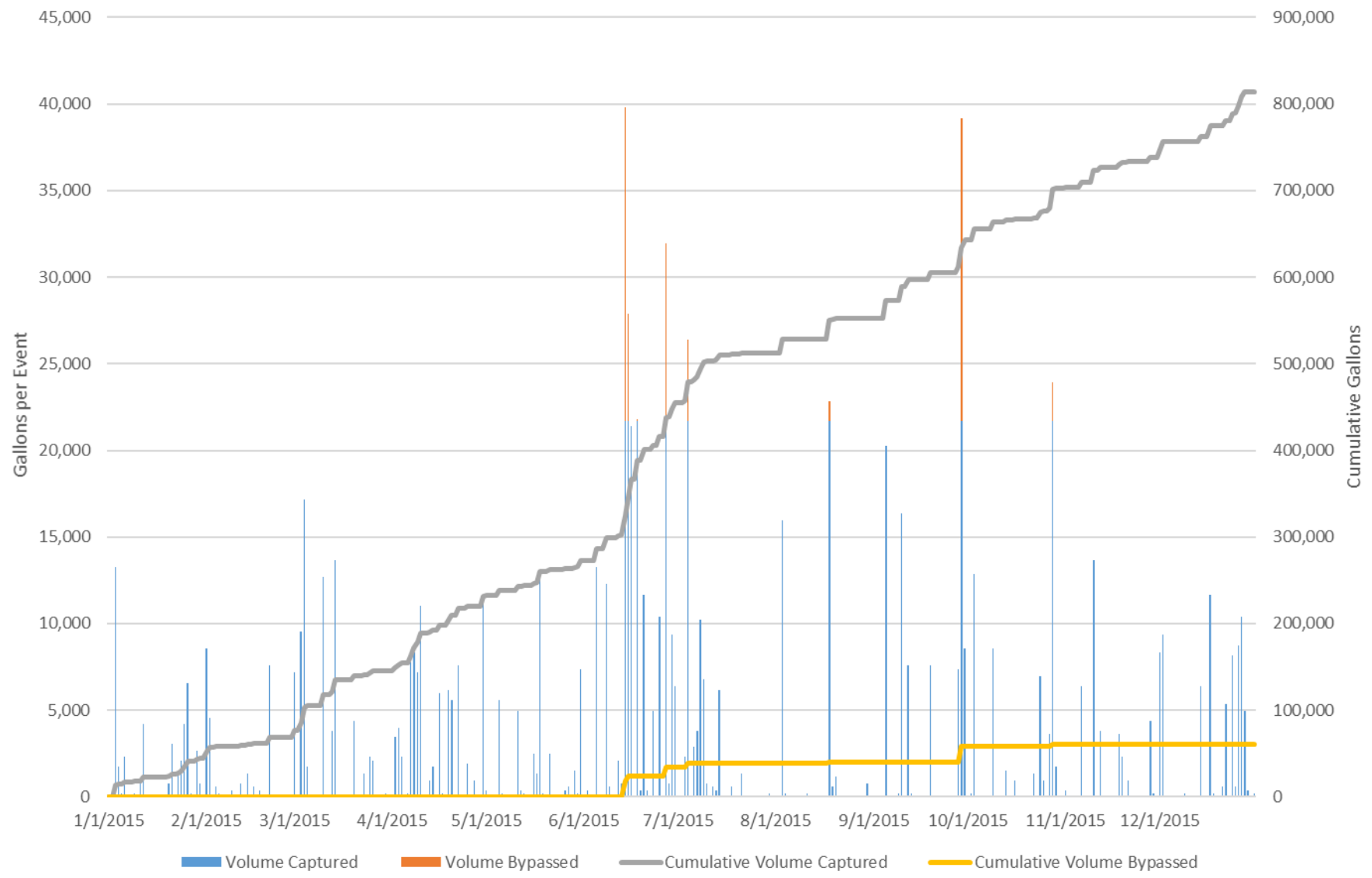
Oakwood-Batavia Stormwater Planters
Projected Stormwater Capture - 2013 Rainfall
0.78 ac of directly connected impervious surfaces



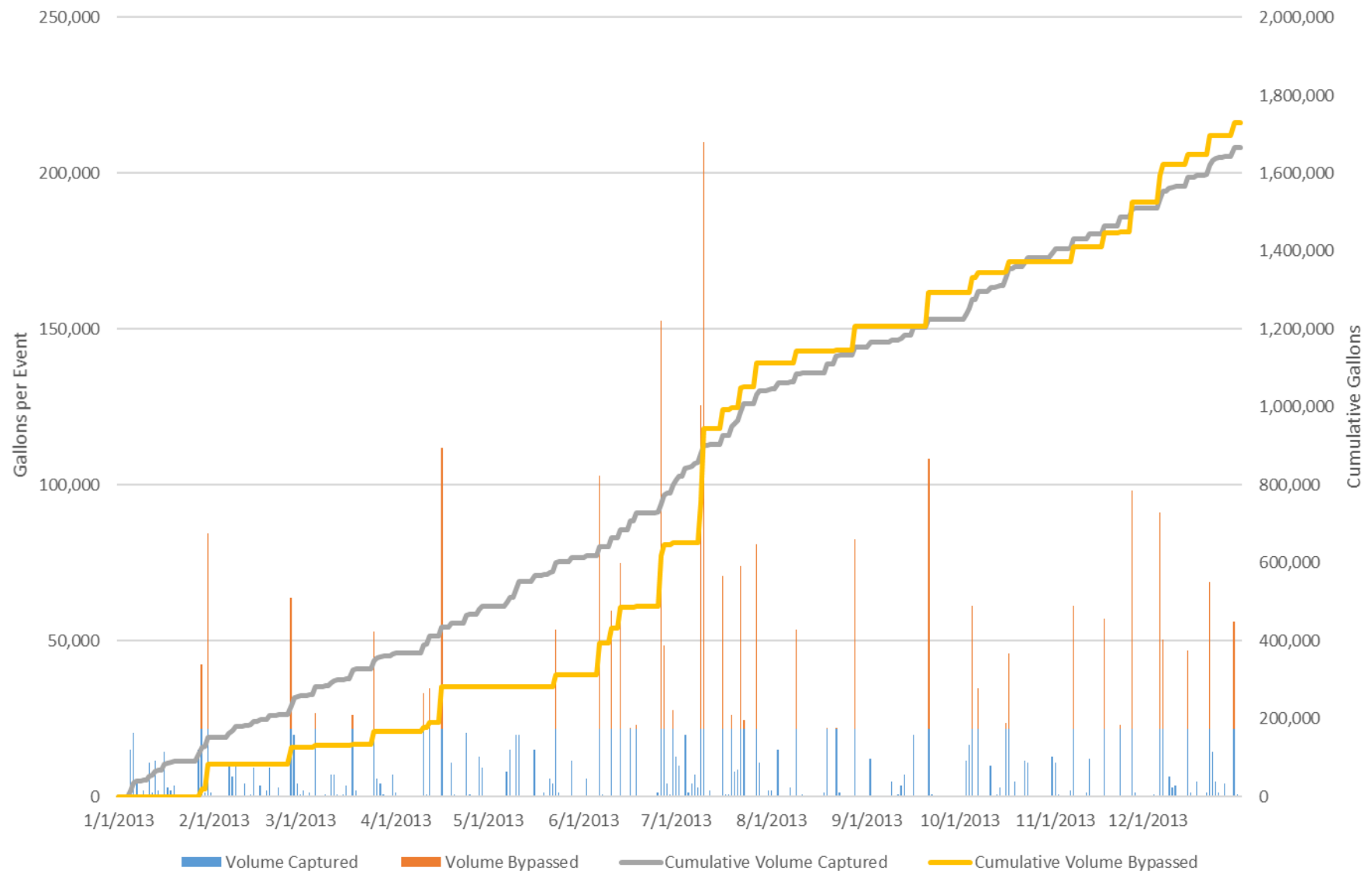
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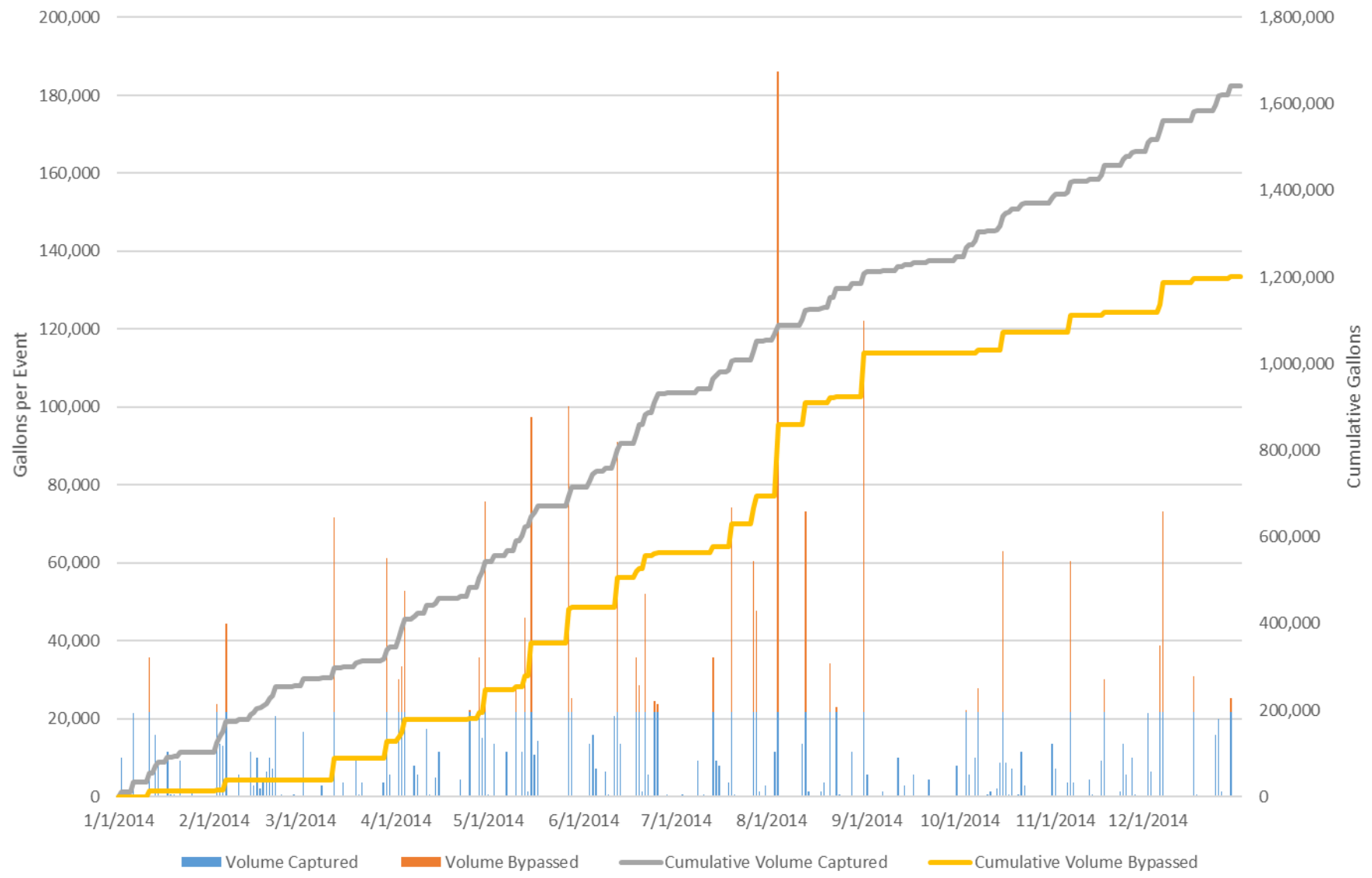
Oakwood-Batavia Stormwater Planters
Projected Stormwater Capture - 2015 Rainfall
0.78 ac of directly connected impervious surfaces



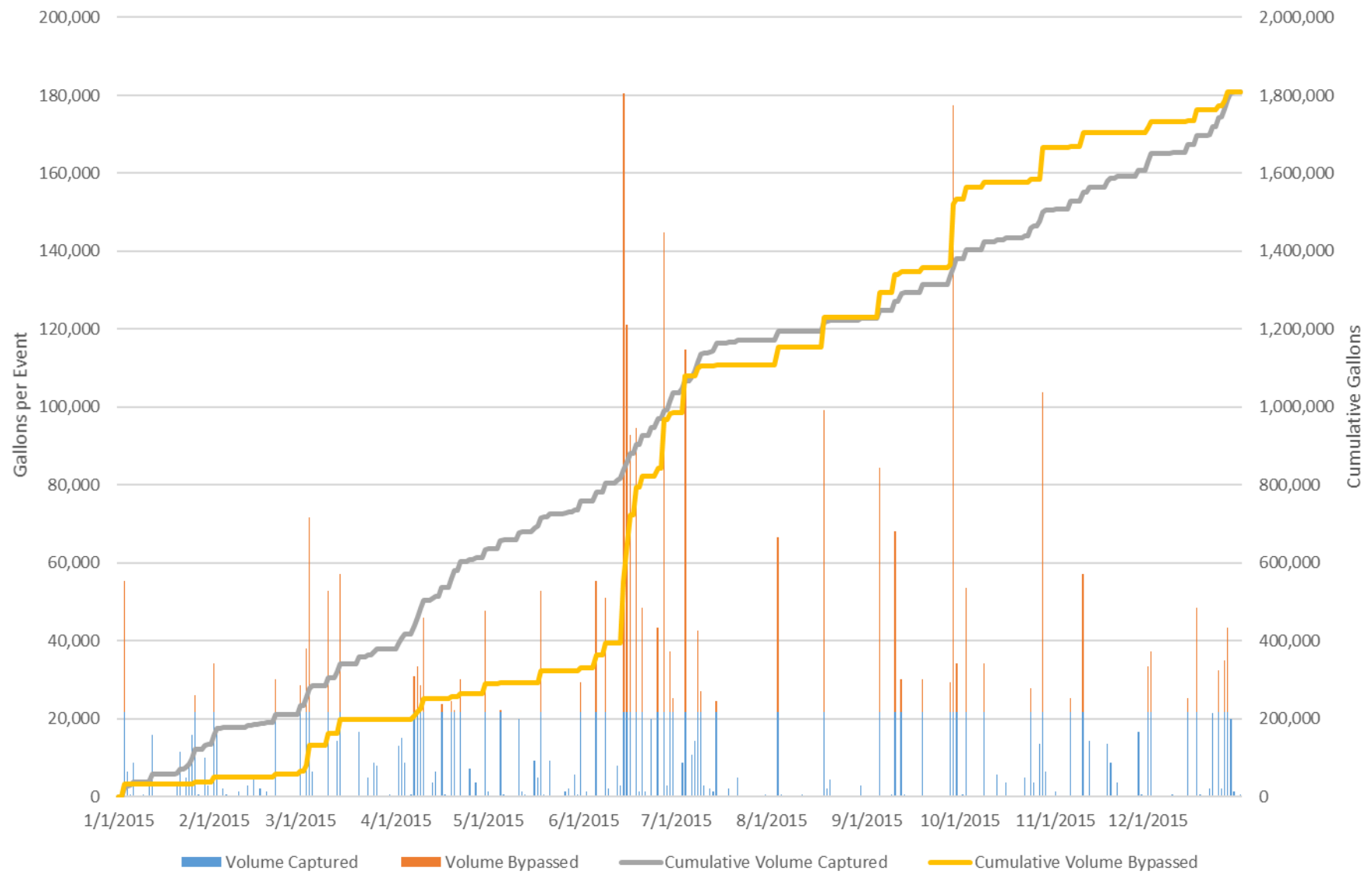
Oakwood-Batavia Stormwater Planters Projected Stormwater Capture - 2013 Rainfall Entire 6.79 ac Watershed



Oakwood-Batavia Stormwater Planters Projected Stormwater Capture - 2014 Rainfall Entire 6.79 ac Watershed



Oakwood-Batavia Stormwater Planters Projected Stormwater Capture - 2015 Rainfall Entire 6.79 ac Watershed



summary results

- Total Storage Volume:
 - 21,700 gallons
- Conservative Annual Capture / Retention:
 - 700,000 gallons
 - Events over 1" begin producing bypass
- Upper Bound Capture / Retention:
 - 1.7 Million gallons
 - Events over 0.25" begin producing bypass
- Cost per Annual Gallon Removed:
 - \$0.36 to \$0.16

