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Los Angeles County Public Works

Stormwater Capture BMP Effectiveness Monitoring



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September 19, 2023

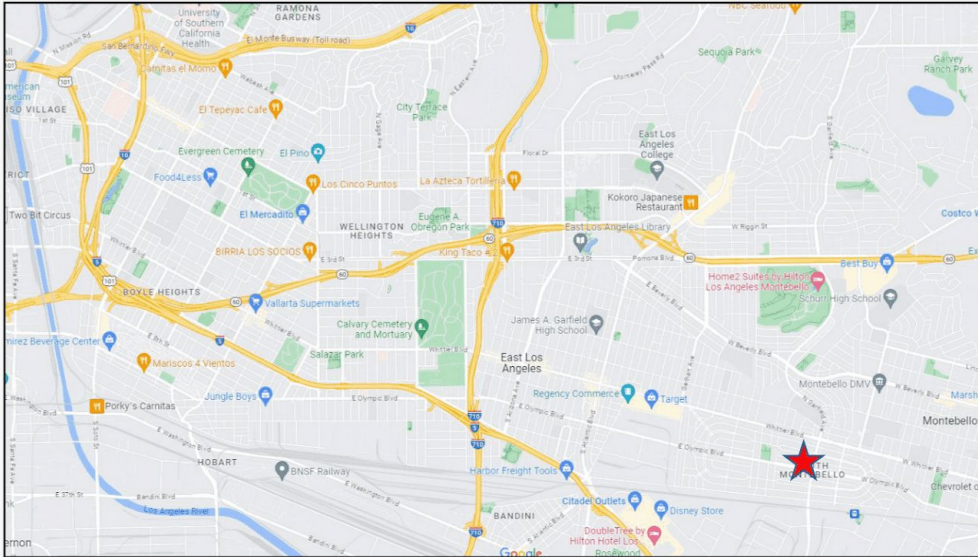
Project Overview

East Los Angeles Sustainable Median Stormwater Capture Project



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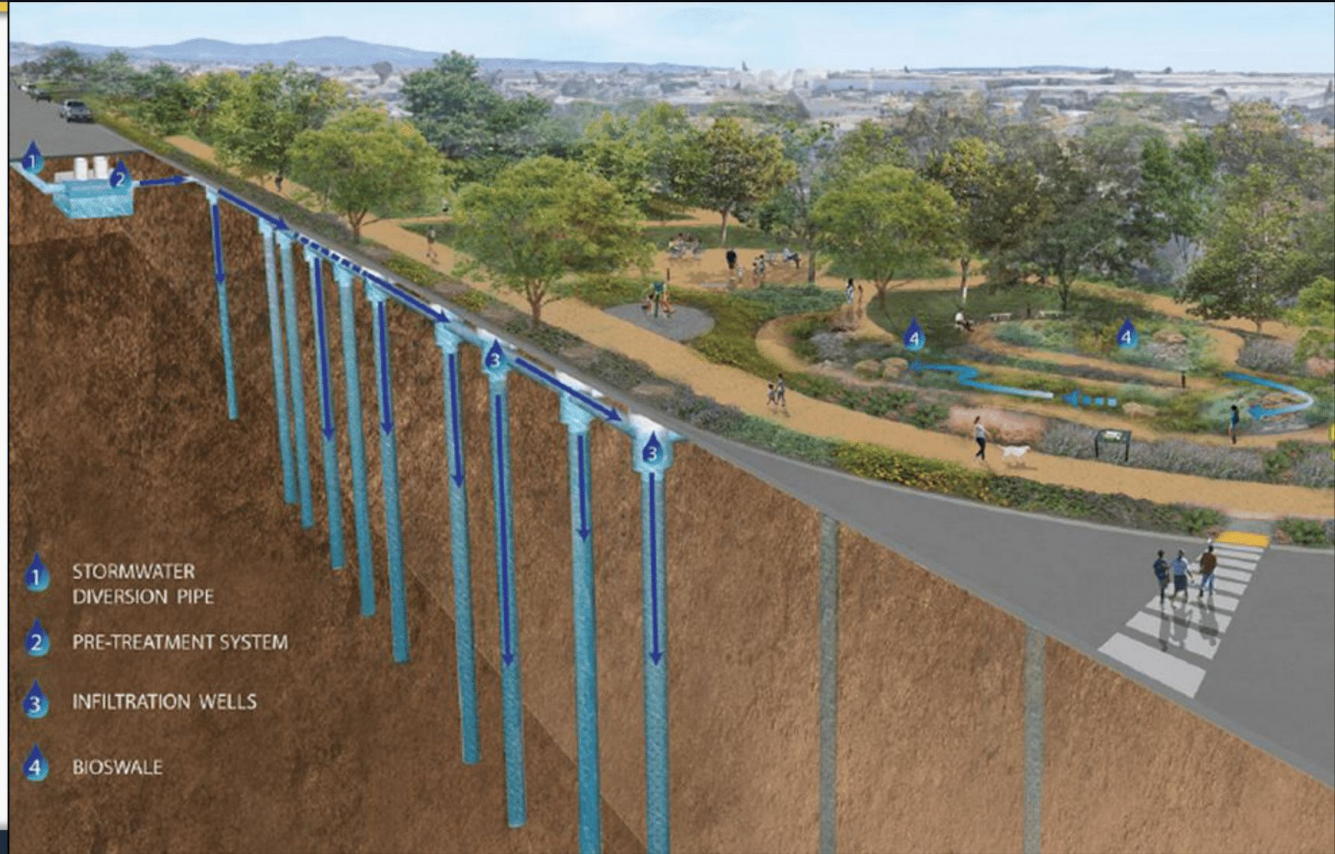


- Unincorporated County Area of East Los Angeles
- Community affected by drought & irrigation restrictions
- Utilized 7 medians for multi-benefit improvements
 - ½ acre to 2.5 acres

Project Overview

East Los Angeles Sustainable Median Stormwater Capture Project

- Captures & infiltrates 22 ac-ft of runoff per storm event
- Five separate stormwater capture systems
 - 4 pre-treatment units
 - 103 drywells
 - Bioswales
 - Biochar Units (UCLA Pilot Study)

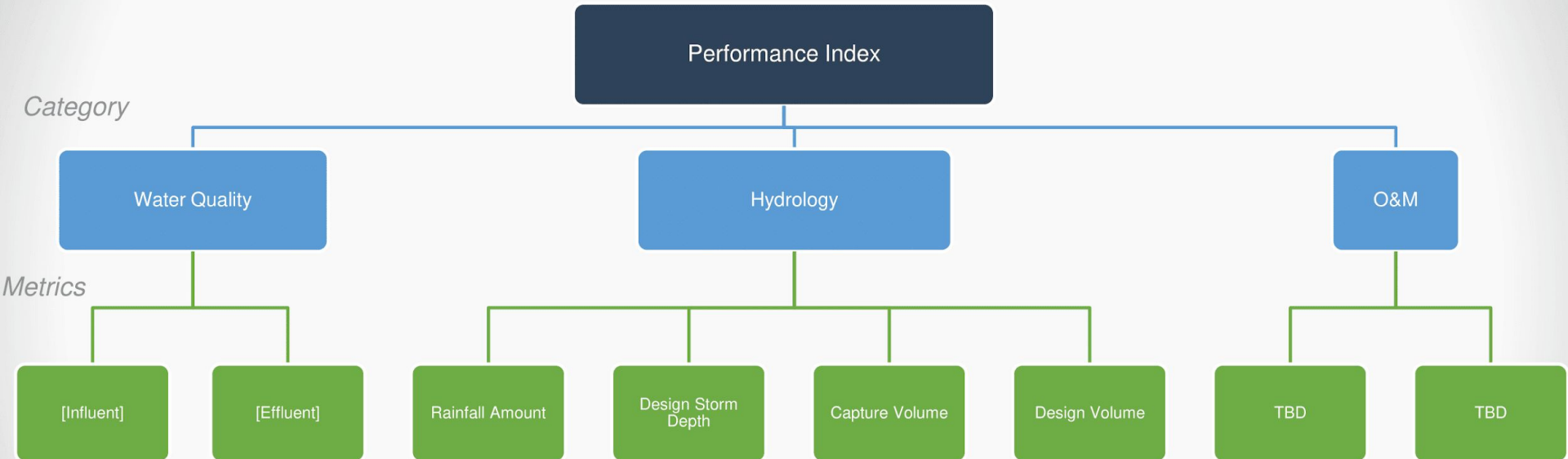


BMP Performance Evaluation

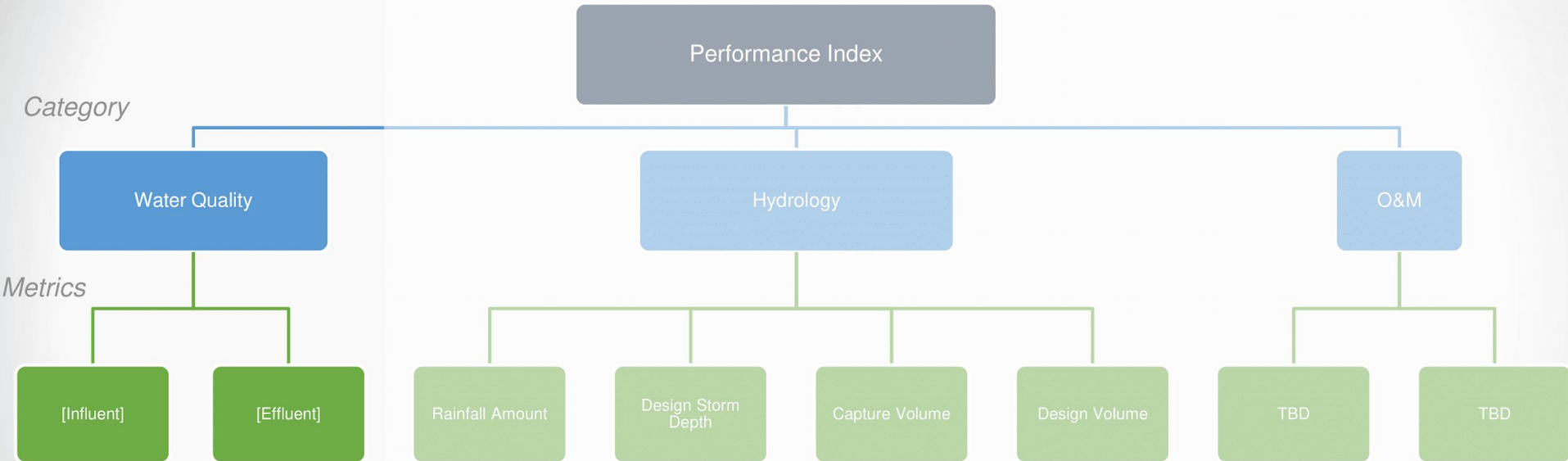
- Quantify project capture
- Analyze system limitations
- Inform future project design
- Provide data for models
- Fulfill grant monitoring requirements



Performance Index Framework

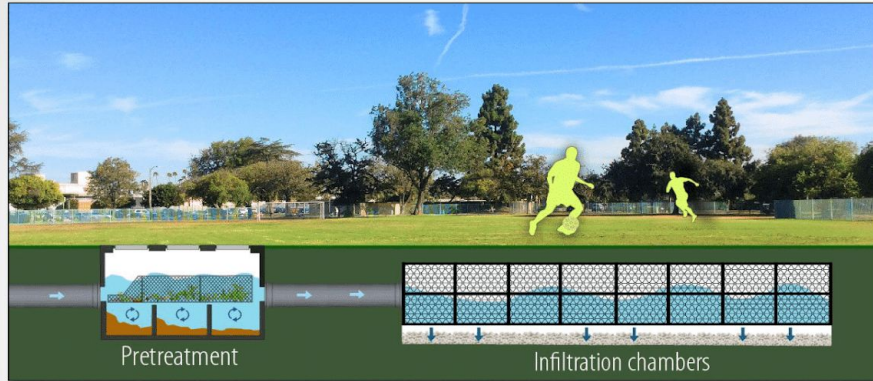


Performance Index Framework



Water Quality Category

How well does the BMP treat the Stormwater?



BMP Performance Index Measures the ratio of

$$\frac{\text{Effluent Pollutant Concentration}}{\text{Influent Pollutant Concentration}}$$

BMP Performing as expected

$$\frac{\text{Effluent Pollutant Concentration}}{\text{Influent Pollutant Concentration}}$$

BMP Under Performing

$$\frac{\text{Effluent Pollutant Concentration}}{\text{Influent Pollutant Concentration}}$$



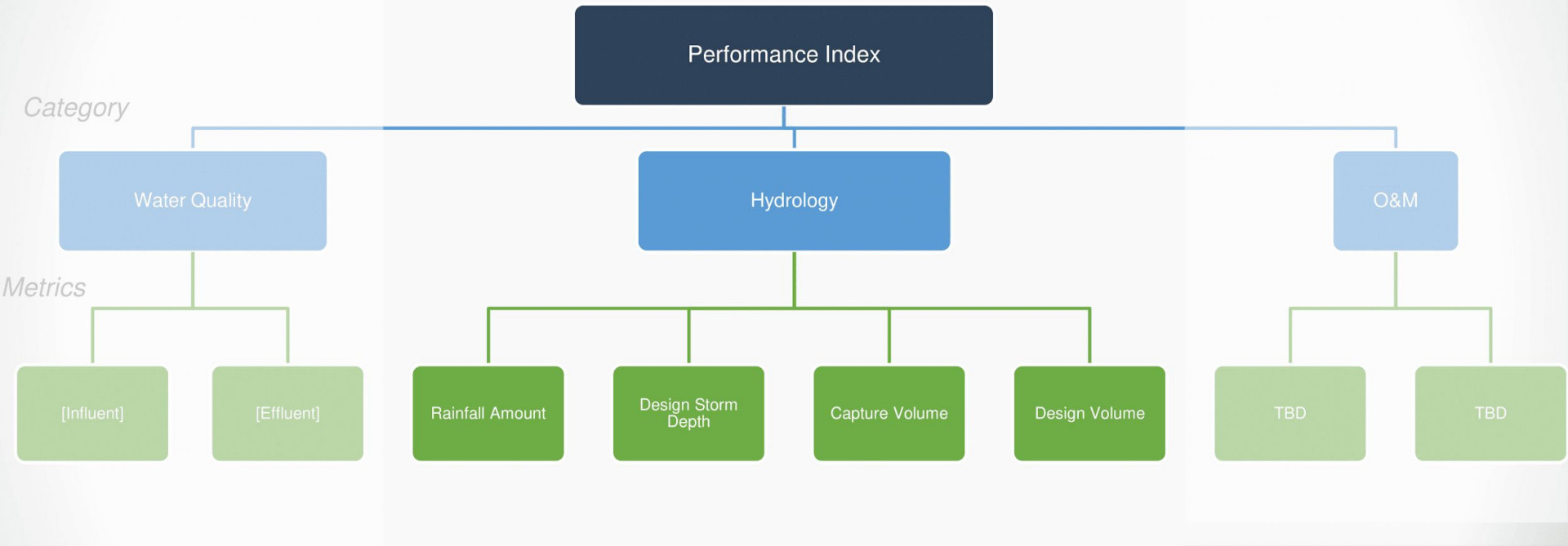
Flow Direction

Influent

Pre-Treatment

Effluent

Performance Index Framework



Hydrology Category

How well does the BMP Capture Stormwater?

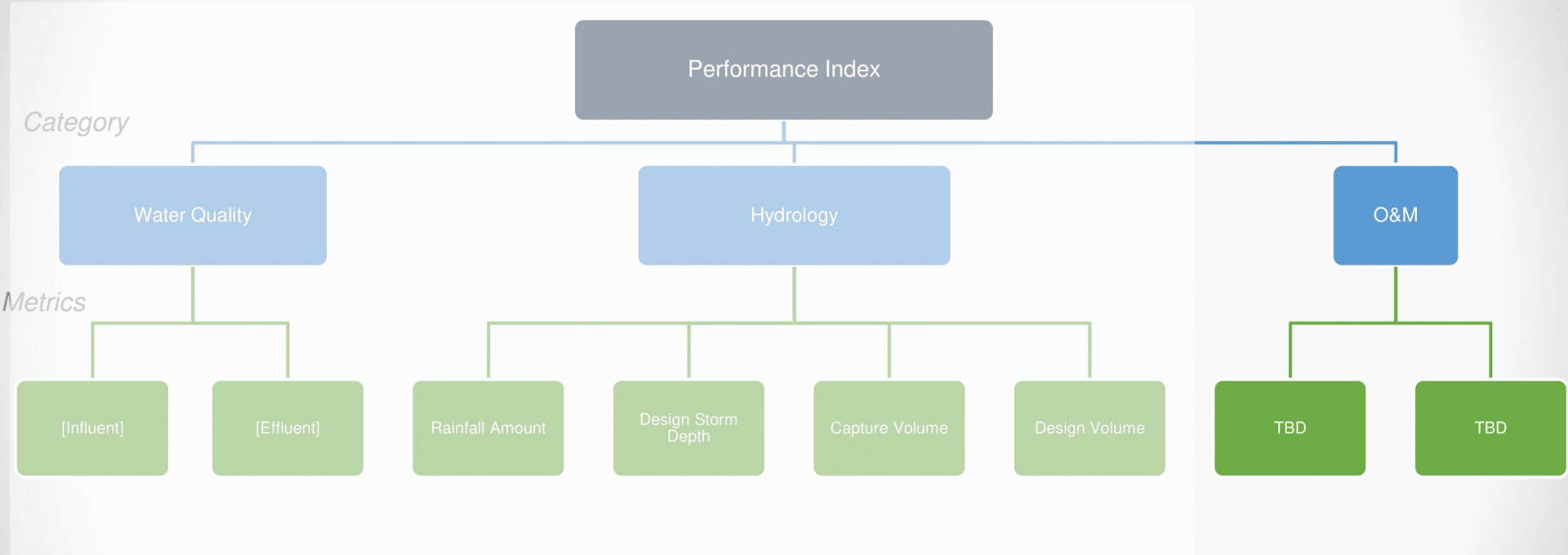
- Compare field data to design values determined by project engineers.

$\frac{\text{Actual Rainfall Depth}}{85^{\text{th}} \text{ Percentile Storm Depth}}$

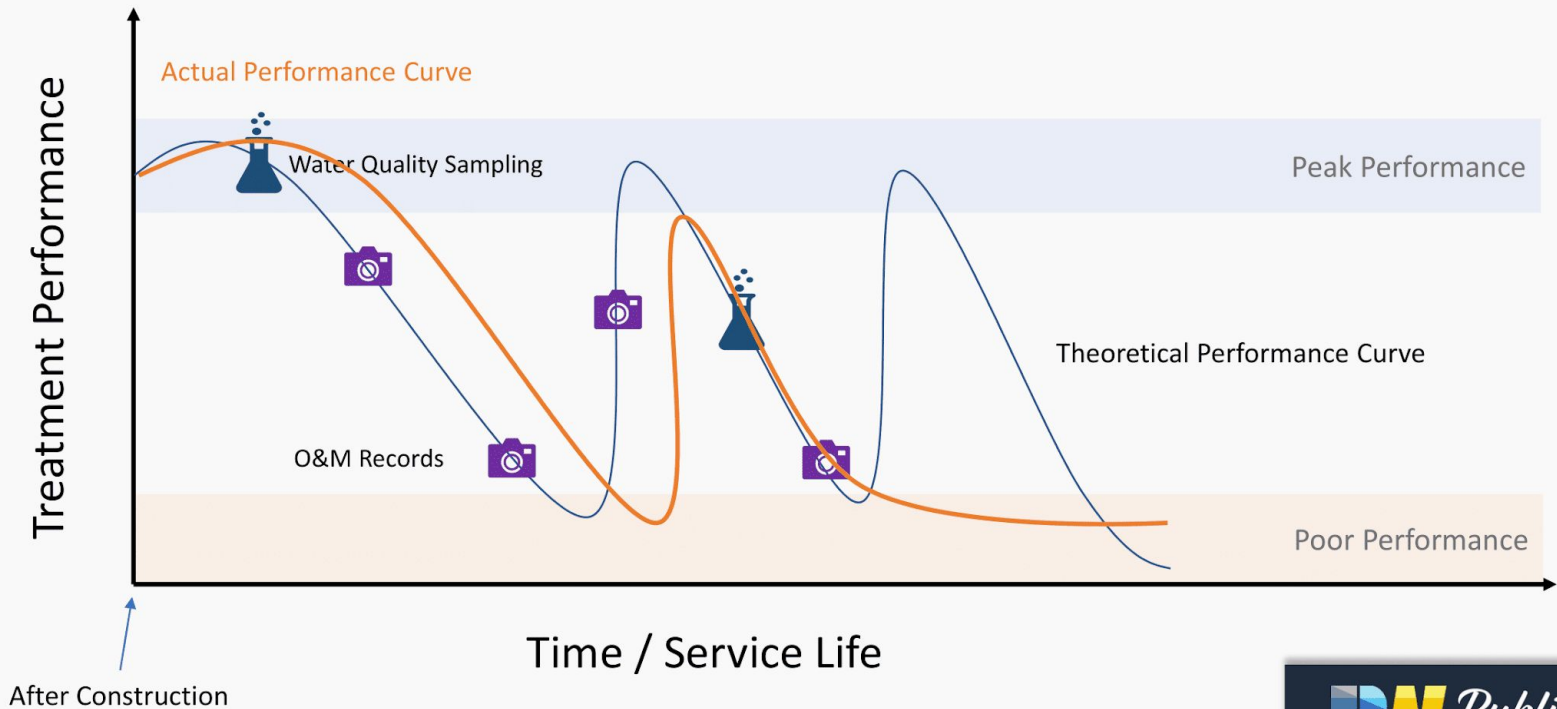
$\frac{\text{Actual Capture Volume}}{\text{Design Volume Capture}}$

- Ratio >1 : Stormwater bypass
- Ratio ≤ 1 : BMP performing as expected
- BMPs are considered failing
 - If bypass occurs during a small storm and the BMP does not reach full capacity
 - both ratios are less than one
 - If there is higher than anticipated bypass, BMP should reach capacity but it does not
 - Capture volume <1 but depth ratio >1
- Ratio >1 : Exceeds expectations
- Ratio ≤ 1 : BMP performing as expected

Performance Index Framework



Operations and Maintenance



After Construction

O&M Mobile Application

An O&M mobile application for field crews

- ❖ **Straightforward & Standardized**
- ❖ **Access Anywhere**



SWQD Stormwater BMP Maintenance Form

Background Information

Inspection date & time *
Monday, July 10, 2... 9:15 AM

Maintenance entity *
LA County Public Works

Inspector name *

Project name *
 Roosevelt Park BMP Project
 Ladera Park BMP Project
 East LA BMP Project
 Other
 Gates Canyon Park BMP Project
 Lloyd Taber Library
 Magic Johnson Park

Station name *

Location *

1 of 3

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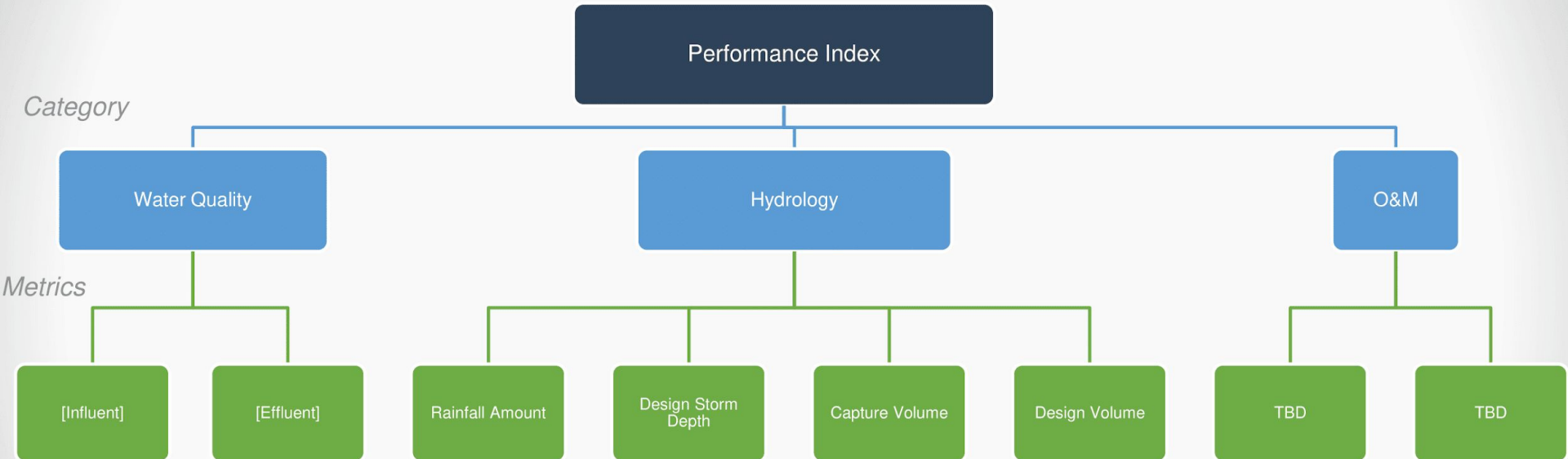
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Performance Index Framework





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