



**Below-Ground Detention**  
University Park, Texas

# Introduction

Background  
Customer Needs  
P4 Solution

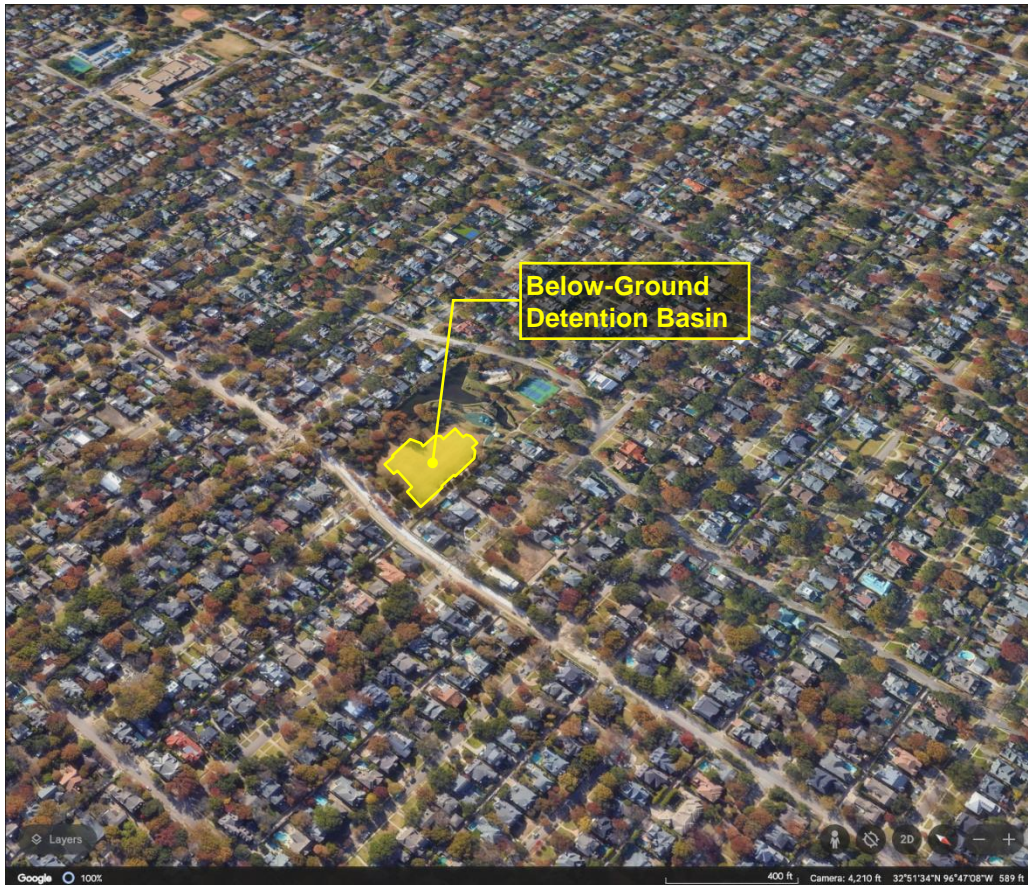


## Background

- Large, Dense Suburban Watershed
- Residential Area Susceptible to Flooding
- Large Detention System Constructed below Public Park
- Significant Expenditure

## Customer Needs

- Environmental Conditions and Water Level to Document Performance
- Data for Calibration of Hydrologic Models
- Information to Guide Future Expenditures
- Documentation for Public Awareness



## P4 Solution

Rain-mX & LIQUA-Level (10-ft range)

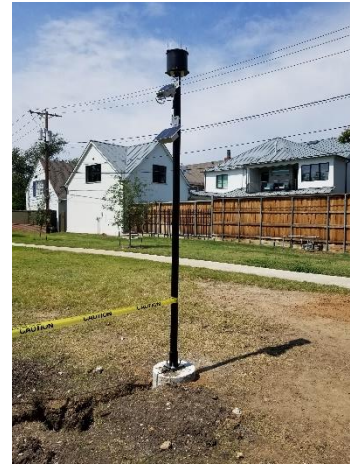
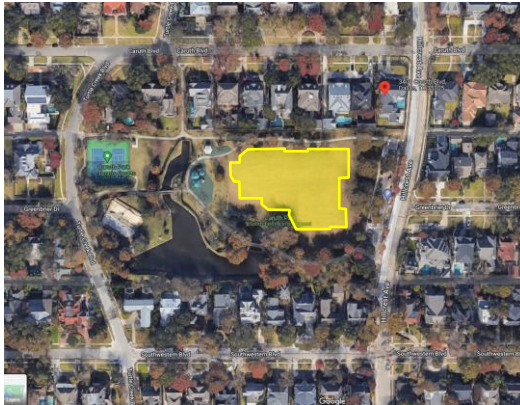
Assembly Drawings

Shop Drawings

Parts Lists

Collaborative Installation

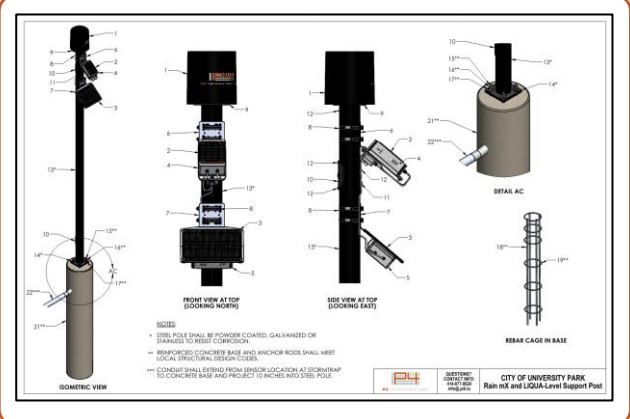
- DPW Installed Sensor Infrastructure
- P4 Installed Sensors



### Rain-mX



### LIQUA-Level



# Measured Data

Operations & Maintenance

System Performance

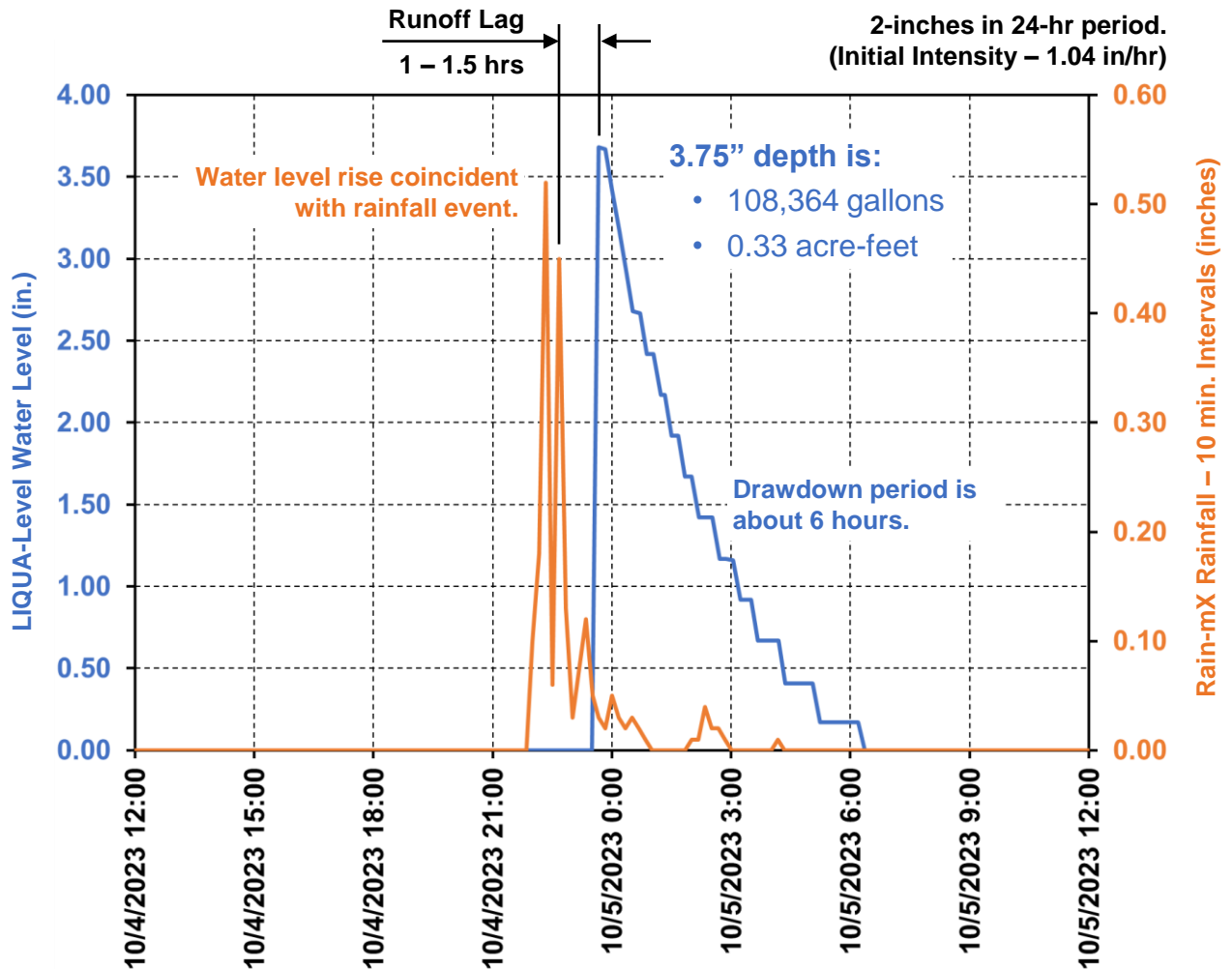
Public Awareness & Transparency

Data for improvement and calibration of hydrologic models.

Documented volume capture.

Documented detention time.

Data for public awareness.



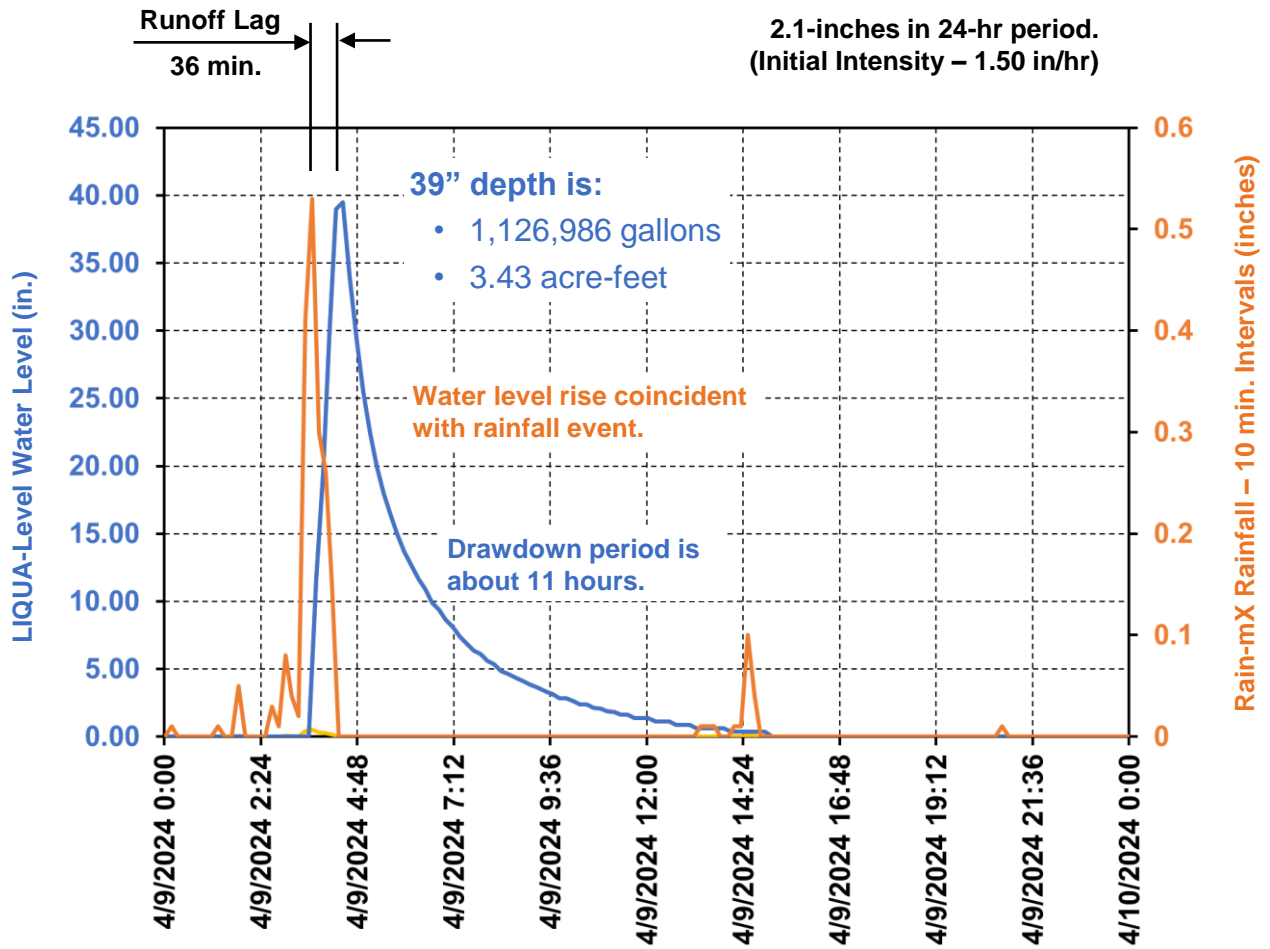


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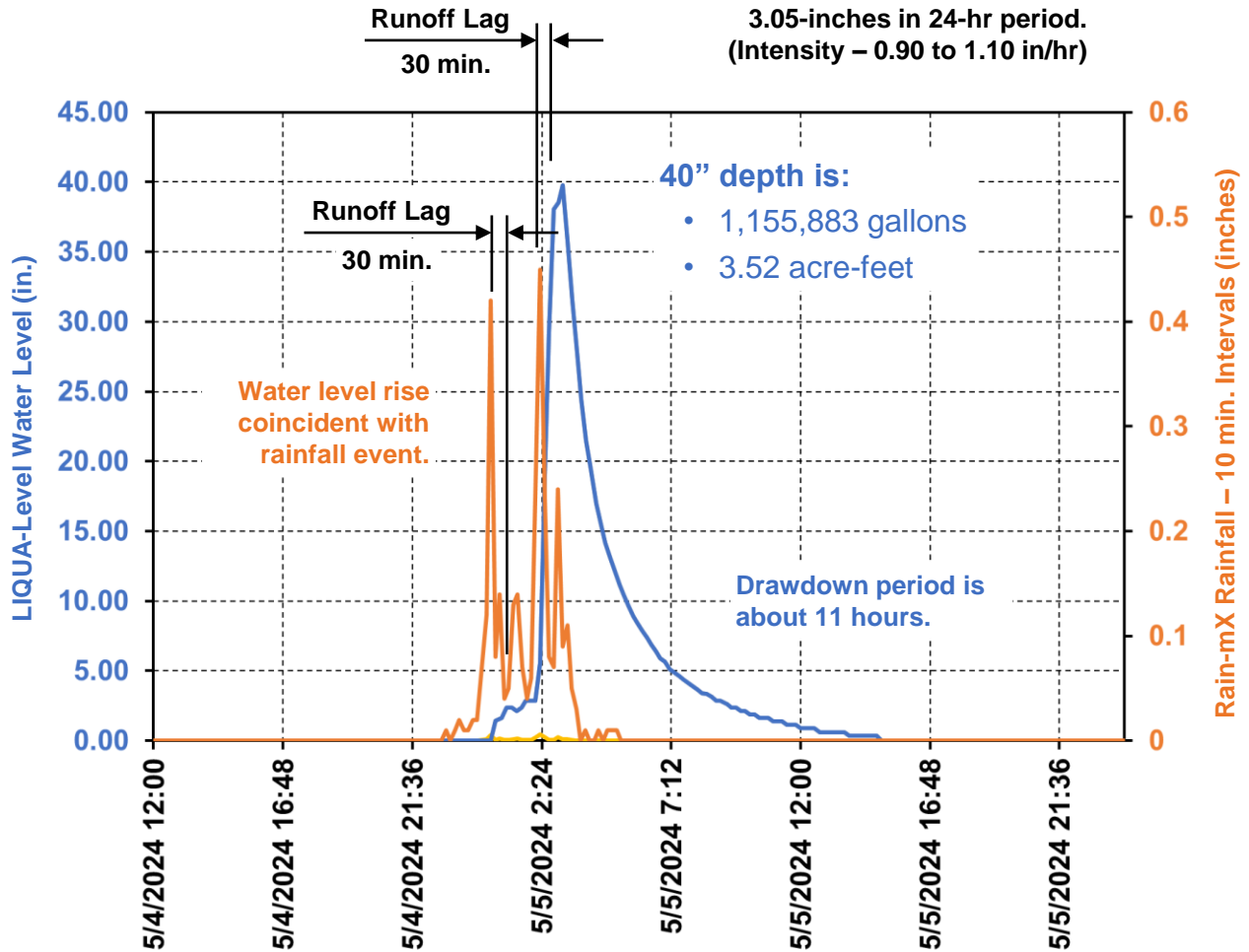
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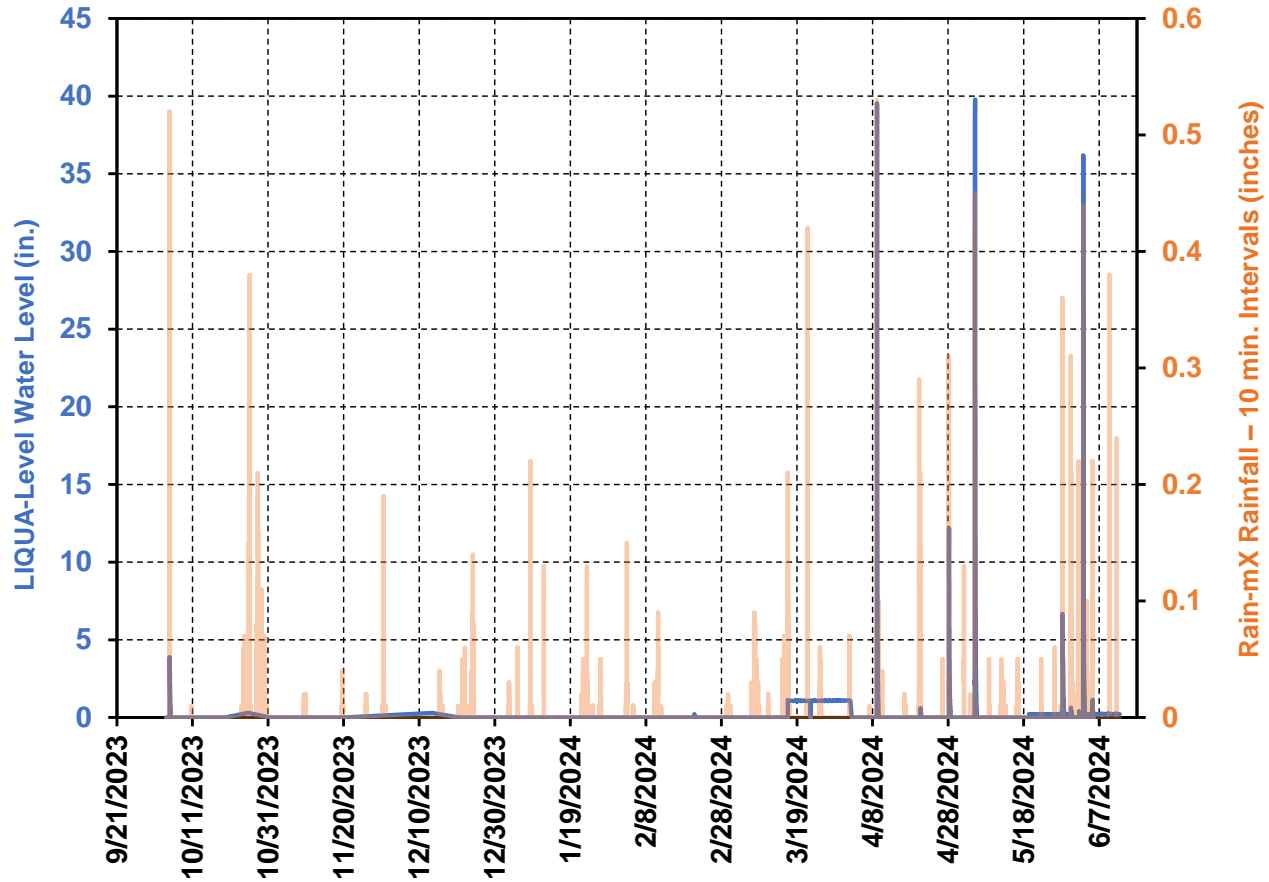
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Continuous Data Stream – 9 Months and Counting



### Performance – Seasonality Impact

- Runoff volume significantly greater in rainy season (spring) versus later fall.
- Runoff lag time shortens during rainy season

### Maintenance – Fill / Drawdown

- Fill rate commensurate with rainfall event magnitude
- Drawdown duration and rate consistent with water level magnitude
- Filling and drawdown consistency indicates no maintenance needed.

### Below-Ground Detention Basin

### Public Awareness - Transparency

- Data stream can be sent via API to kiosks or browser-based ArcGIS platforms for public viewing
- Gallons captured and detained can be recorded monthly, quarterly, annually and passed on for public viewing (more than **2.3 Million gallons** in two events)

### Performance - Hydrology

- Volume captured data is VERY useful for hydrologic model calibrations
- Improved modeling greatly improves decision making going forward.

# The End

Let P4 show you how digitalization of  
stormwater infrastructure can change  
the game.



**P4** INFRASTRUCTURE



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