

Project Status: CS-175; Dynamic Collection System Control

Summary

The two areas of focus for the project CS-175; Dynamic Collection System Control are: analysis of dynamic control for the GDRSS system, and an operator decision support dashboard. Here we provide a review of progress made for each of these tasks and discuss future work.

Updates

Decision Support Dashboard

We are pleased to share that we have made great strides towards the completion of the decision support dashboard and have a working version online. The GLWA Dashboard can be found [here](#). For a brief tutorial about navigation of the map dashboard features, please watch this video [here](#).

With operator feedback, we have built a dashboard map that provides a single platform for visualization of data, that is both internal and external to GLWA. Our dashboard allows a synthesis of information that can help inform operations. Now, operators can visualize flow and level data from assets across the GLWA stormwater network in the same map panel as radar and precipitation estimates. The framework used in our dashboard is extendable, allowing for incorporation of other GLWA or external data streams.

The dashboard currently displays timeseries data for 12 different measurement locations within the GLWA network, an in-map radar layer, and precipitation depth estimates for each of the 12 measurement locations for the last 1, 6, and 24-hour intervals. The map dashboard also displays a pruned skeleton of the GDRSS stormwater system.

Dynamic Control for the GDRSS

We have analyzed the GDRSS SWMM with design storm events and visualized historical observations at many instrumented assets in the system, with a focus on the portion of the system that contributes to the DRI, to investigate locations that have potential for control. We have identified the network of inline storage dams and the CSO-RTB complex of the east side as areas of focus for our analysis. To speed up process, we have deconstructed the GDRSS down to just the DRI. This allows for quicker computation of the SWMM model for the region of interest.

Future Work

Decision Support Dashboard

Moving forward we would like to start a conversation with GLWA personnel about the opportunities to bring in other data points within the system (i.e. level data, pump statuses, etc.) Within the current framework, opportunities also exist to extend the dashboard to include forecast data with the side panel and dynamic visualizations within the map. This conversation should include a discussion with Matt Starrman about best practices for data acquisition and availability.

Dynamic Control for the GDRSS

We continue to look at modeled and observed data as part of our investigation into opportunities for dynamic control. Using the deconstructed SWMM model, we will systematically look at downstream results using simplified control schemes at different locations across the DRI network.

Reporting

We look forward to providing an update of our progress on February 28, 2018.



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