

# SmartWeir™

## Measuring Over a Weir



### HOW IT WORKS

SmartWeir is a solution for determining start, stop, duration times & overflow volume of a combined sewer overflow (CSO) event using real-time measurement of water flow over a weir in a variety of CSO & non-CSO structures. This solution is being used as an asset management tool, helping users assess & prioritize what, if any, upgrades are necessary.

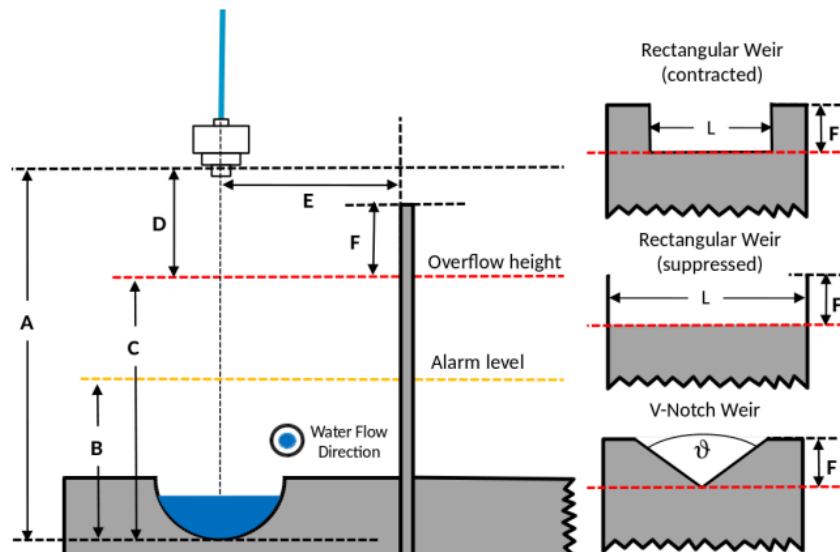
Based on the weir design, the SmartCover sensor is installed & positioned behind a weir to calculate flow rates using the classic weir formula developed, tested & approved by ASTM, ISO & USBR. Level & flow data are transmitted to the SmartCover cloud, where it is seamlessly accessed by system users via any web-enabled device. For CSO sites, the start time, stop time & incident flow volume can be logged & reported in real-time. Every SmartCover system supports two-way communication, allowing operational parameters to be changed by the user at any time to provide optimal results.

### REAL-TIME MEASUREMENT

SmartWeir is a solution for determining start, stop, duration times & overflow volume of a combined sewer overflow (CSO) event using real-time measurement of water flow over a weir in a variety of CSO & non-CSO structures. This solution is being used as an asset management tool, helping users assess & prioritize what, if any, upgrades are necessary.

### BENEFITS

- Documents CSO event start time, stop time, duration & overflow volume
- Apply weir flow formula developed & used by ASTM, ISO & USBR
- Integrate NOAA based & ground truth adjusted real-time rain data
- Gain historical and predictive insights of tidal effects on sewers with USGS data
- Real time notification of overflow conditions
- Signals when an overflow structure requires cleaning
- Shows how your system responds to rain events
- Measure mitigation effectiveness
- Fulfill public notification for regulatory compliance
- Configuration for non-CSO structures also available such as treatment plant influent or effluent, lagoons or flumes



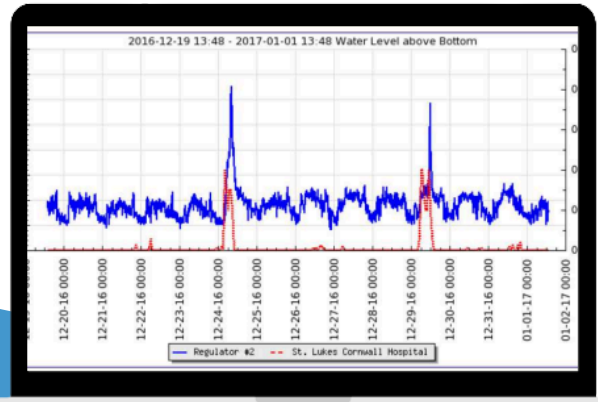
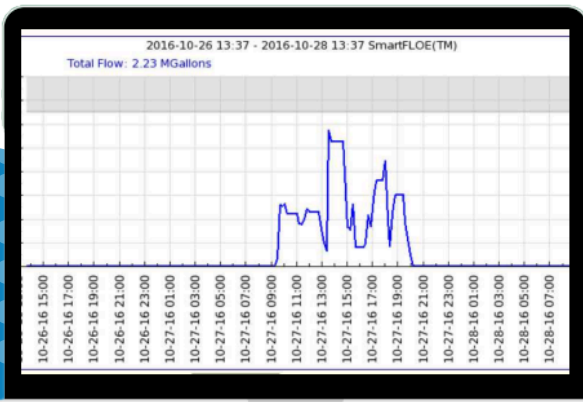
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**SMARTCOVER**  
A Badger Meter® Brand



# SmartVault™

## Water Intrusion Detection

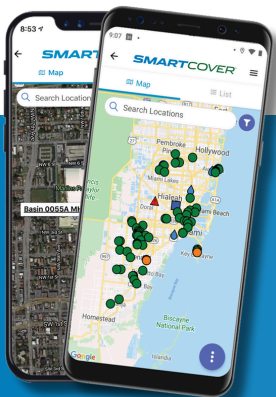
### CSO REPORTING

Under typical, dry conditions, combined sewers do not overflow. In rain events of sufficient intensity, a CSO may occur. Many regulatory agencies require combined sewer system (CSS) operators to report within hours when a CSO starts, stops, the duration of the event, and the overflow volume.

SmartCover has a proven, turn-key solution with the capability for public notification. The system is able to:

- Detect rising levels
- Notify when an overflow starts & stops
- Quantify volume discharged

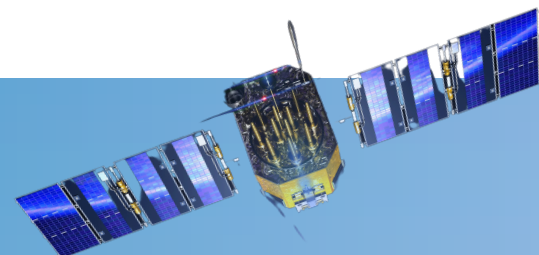
Easily document a CSO event, meet critical CSO reporting deadlines & organize the data for public communications.



With the SmartCover mobile app, get the insights you want, when & where you need them. Available for both iOS & Android devices.

### SMARTCOVER FEATURES

- Hardware components engineered to function in wet, humid, corrosive conditions
- Flexible patented sensor designs & deployment
- NO CONFINED SPACE ENTRY\* installation or service
- Reduces traffic management resources
- Secure, online dashboard with easy-to-read, visual reports
- Compact, long lasting battery
- Two-way communications permits remote settings management
- Fusion with rain, river & tide data
- Variable timing options for data scan & notifications
- Done-for-you analytics
- Works when there is no power
- Satellite coverage works with sites difficult to access & withstands cellular outages
- Built in tilt switch for real time entry detection
- Encrypted secure servers with redundancy
- Mobile app for iOS & Android
- API available
- Configurations for open channels, canals, holding tanks, lift stations, outfalls, wet wells, reservoirs & utility vaults



With satellite based data transmission, your sewer status connection is maintained even during cell outages & the most severe weather.