Context:
Two fold purpose: To examine the behavior of a large stream of water falling over a distance. Ideally this would have been a waterfall or natural river – but lighting and equipment protection under these environments is difficult to control and natural waterfall locations (in Colorado) are difficult to come by. So I elected to use a man-made waterflow. I also wanted to experiment with series photography and chose to do time-averaged exposures together with "Instant" (flash) captures.

Apparatus:
Standing waterpipe 10" in diameter. Pipe runs from a pool at floor level to a height of 15' then out over the pool for 8'. The end is open and pours back into the pool. The water flow was mostly smooth with only some turbulence near the bottom of the drop.

Visualization Technique:
Standing behind and beneath the waterflow, framing a large colored objects and areas through the flow – I used the distortions of the colored objects to reveal the movement of the water. Two lighting sources were used: Sunlight behind and beside the waterflow used at a relatively slow shutter speed made a time-averaged exposure, and the built-in flash from the camera was used to take a much shorter duration image. The flash was set to "1st Curtain" so while the exposure was at 1/60 shutter, the flash was set to a fraction of the time the shutter was open. (Apx. 1/500th second)

Photo Technique:
Field of View: 4' wide x 6' high
Distance: 6'
Focal Length: 10mm (Wide)
Camera: Canon G7 10MP Digital Camera
Settings: ISO 80, f3.2, 1/13 (sunlight) & 1/60 (Flash) shutter speeds
Processing: The image was cropped to show the detail of the flow. The brightness and contrast were boosted to emphasize the water variations. The color was adjusted to neutralize the "green" tone of the water reflected from the pool.

Summary:
I like the idea of working with a series of images. While esthetically the "instant" flash picture has more interesting detail – it is in comparison to the time-averaged image that I get a better understanding of rate of speed and shape of the flow. The physics of the image are fascinating – and make the possibility capture of a "decisive moment" very enticing. I like how the flash worked with the phenomena (water flow) but would like to experiment with either a larger flash unit of multiple units controlled to work together. It would be interesting to follow this up with images that use variable flash lengths.
The idea of using a series – a set of photos with progressively longer flash times up to continuous light would be a fascinating series to explore. Couple this with a series of waterflows of variable size and length of drop to explore how the texture of the flow changes as the size and speed of the water vary.
In planning for this image, I used the North Boulder Rec center's pool and water spout. This gave me exactly the type of flow I was hoping to work with including the ability to

adjust the flow for variable water pressures – but gave me less control over the surrounding environment. Light, backdrop, color choices, etc. I enjoyed the challenge of working in a public place – but would like to experiment with a setup that allows me to have greater creative choice.