and in a lower quadrant Water Supply has a complicated collection of regulator chambers. All these pipes, ducts, and conduits have to zigzag around subway stairs and vent structures. After I figure out this stream business, I've got to get one of the boys to draft it all onto one plan. There was a time that I would draft it myself, though nowadays the composite utility map shows up on a computer screen in pretty colors, the product of someone more friendly with electronics than ink.

I'm on my second container of coffee, looking again at the Transit Authority profiles when it hits me. If the original ground contour is thirty feet down, that's where the stream would be. If so, how can you see it through a hole in the sidewalk? And at thirty feet down, covered with all that dirt, rubble, and subway, how would anybody see its effects? Except, of course, as settlement, just as the City report had suggested. But with that much fill, you don't need a stream to cause severe localized settlement. In the days when this was backfilled, uncontrolled fill — dirt loaded with wood, boulders, whatever — was the norm. Settlement of this kind creates voids under the sidewalk that have a nasty habit of filling with water when it rains. Perhaps this stream is a "sinkhole" after all, a term most people use to characterize any localized settlement, but which actually refers specifically to subsurface voids caused by rainwater infiltration.

We get no rain overnight or the next morning, and I figure the prospects of getting an eyeful of the underground stream are pretty remote.

Armed with my map collection, I trot up the subway stairs and proceed to take inventory of settled curbs, cracked sidewalks, or any other signs of settlement. I find precious little, much less any chink through which someone might spy a "subterranean aquifer." Until I stray a block off the circle, that is.

At the corner of the next intersection, I find a down-sloped concrete sidewalk notched into a V. It starts at a water main manhole on the corner, gets deeper where it passes the hydrant, then flattens out further downhill. Asphalt at the crux of the notch probably patched the hole, through which somebody witnessed the stream. I note that the sidewalk flags next to the adjoining building aren't party to the collapse. A look in an open cellar door tells me that the basement wall is five feet out from the building face and is obviously supporting the first row of flags, which means that whatever is causing the sidewalk settlement isn't settling the basement wall. Therefore, the cause of the so-called sinkhole must be above the foundation of that wall. Checking Water Supply maps, I find that this sinkhole sits directly over, and in line with, the water main running down the sidewalk. The protecting bollards next to the hydrant look drunk, and even the roadway in front of the hydrant is cracking.

Case solved. Water leaking from the hydrant (the area where the pavement is most distressed) is settling the soil under the sidewalk. As the water and soil flows away from the hydrant, the effects are less pronounced. It may even be that this action has caused the main itself to settle and leak, which might also explain why the sidewalk is collapsing in line with the pipe. Hydrant water, probably in conjunction with rainwater or drainage water, flows downslope through the void, and when the sidewalk finally buckles, the underground stream is witnessed. The guilty party? Maybe a truck backed into the hydrant, not so hard that it started a geyser, but hard enough to start the leak.

By the way, this stream flows downslope south to north. The stream on Viele's map flows east to west, toward the East River.

Without a formal soils investigation or maybe tearing out the sidewalk, I can't prove my findings at this stage. It may yet come to that. But I'm satisfied that despite the historical geography of the circle, we won't be seeing any trout fishing in Manhattan. Not any time soon.

Yeah, I know. So maybe badgering the witnesses in the office didn't exactly identify the culprit. But that's the problem with maps, and sometimes with the manhole peepers like me who use them: seductively full of history, detail, and promise, maps can mislead. In my line of work, I've got to take what they tell me and match it to the hard evidence. Just to keep them — and me — on the up and up.

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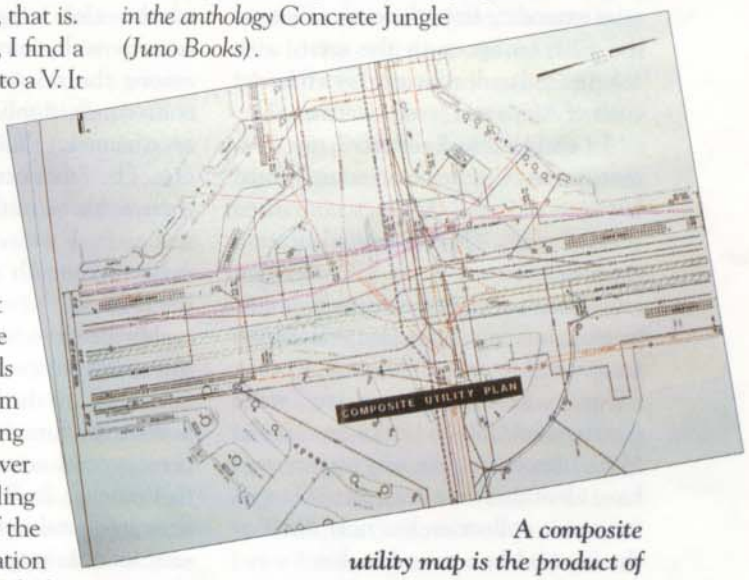

A composite utility map is the product of someone more friendly with computers than ink. (Courtesy of Steve Vazquez, The RBA Group.)