

## Environmental Monitoring Technology: From Stream to Cloud

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While remote water quality monitoring may be an important tool in watershed management, it is often costly and difficult to implement. By combining low cost computing technology, power management and 'disruption tolerant networking' (DTN), water quality data may be collected in remote locations and transferred automatically to a network (or 'cloud') using a data mule. Data mules may take the form of a data receiver mounted on a postal truck or a school bus or a smart phone that collects data while carried by a maintenance person. This process is shown diagrammatically in Figure 1. Preliminary data shows the allowable time between calibration and the battery life of the unit which may be used as operational parameters. Side by side tests with YSI 600XLM data sondes have been used to determine the accuracy of the low cost units. This technology will allow watershed groups and agency personnel to use low-cost, remote water quality monitoring, data transfer using disruption tolerant networking (DTN), and automated data management and visualization.

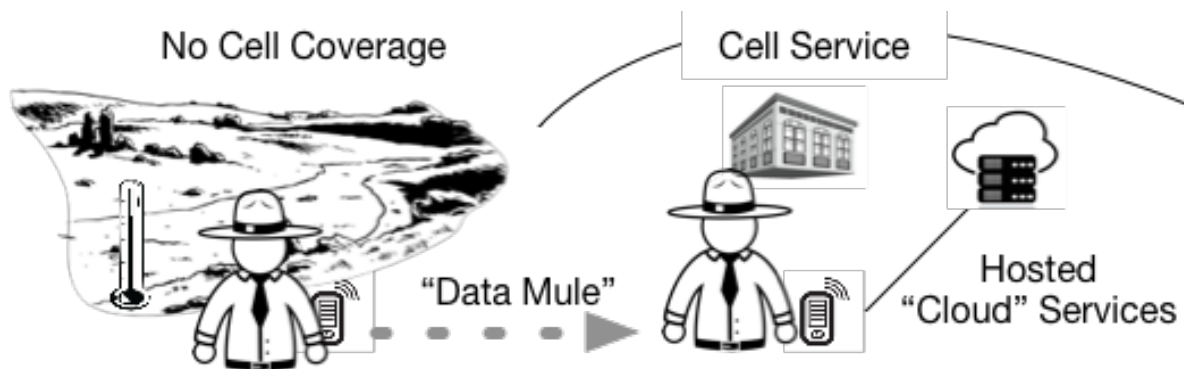


Figure 1. Diagram of Pilot Project