



# **Little Lehigh Creek Watershed Monitoring and Drought Contingency Planning**

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# Objectives

- Establish local drought triggers
  - Groundwater & surface water
  - Long & short term timeframes
- Characterize relationship between creek flow and well withdrawal
  - Quantify surface-ground water interactions
  - Detailed water budget

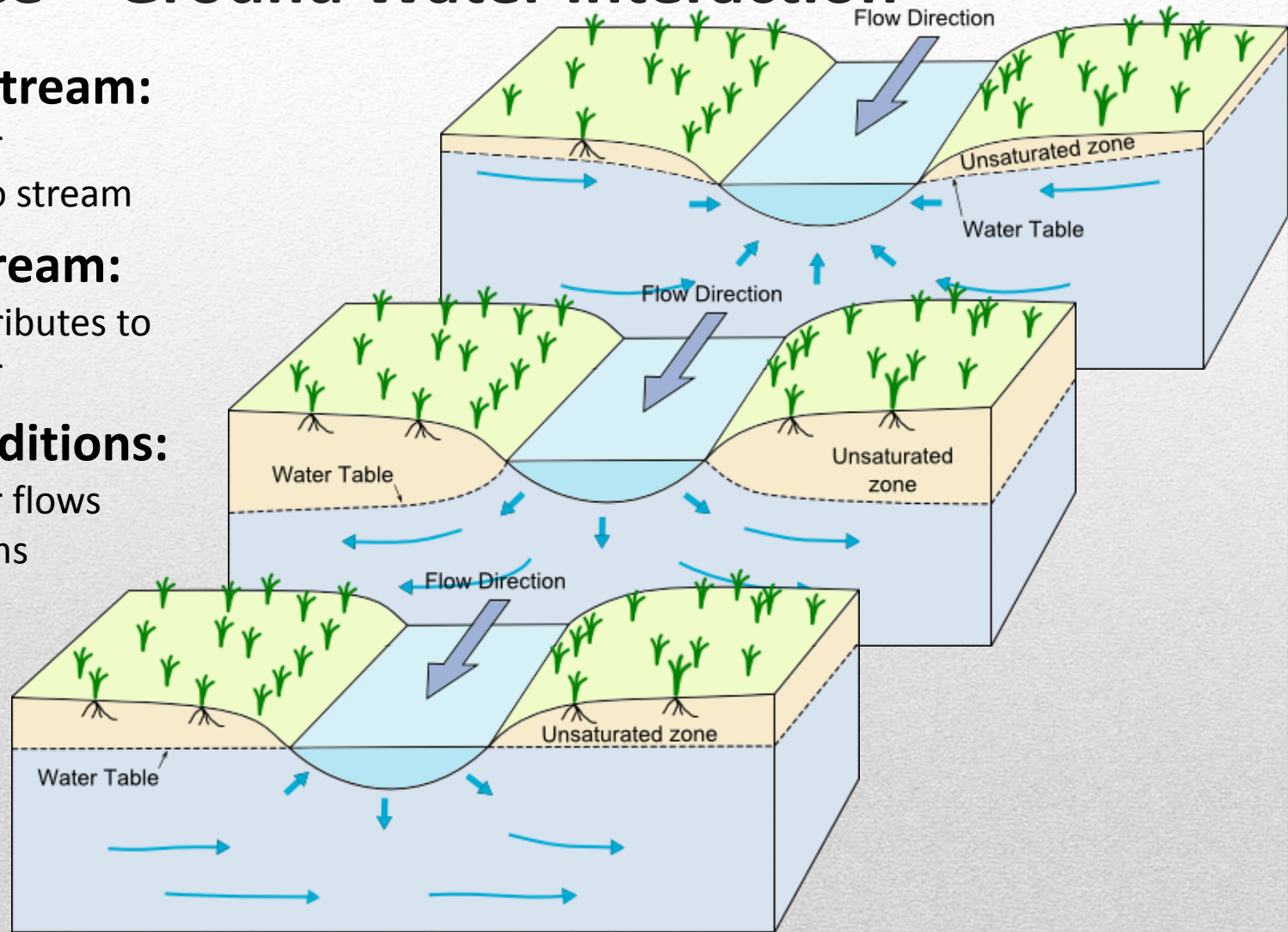


# Drought Triggers

- Quarry level
  - Groundwater
  - Time lag
- Little Lehigh Creek intake pass-by flow
  - Surface water
  - Quick response
- Schantz Spring flow
  - Groundwater
  - Unknown age
- Production Wells
  - Groundwater
  - System yield / water levels

# Surface – Ground Water Interaction

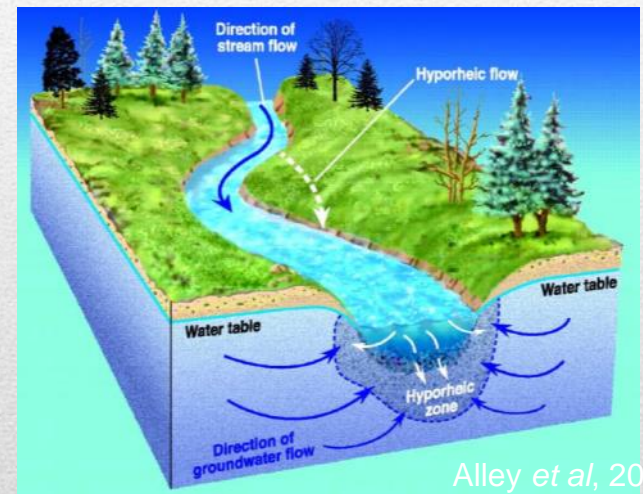
- **Gaining Stream:**  
groundwater discharges to stream
- **Losing Stream:**  
Stream contributes to groundwater
- **Karst conditions:**  
groundwater flows under streams





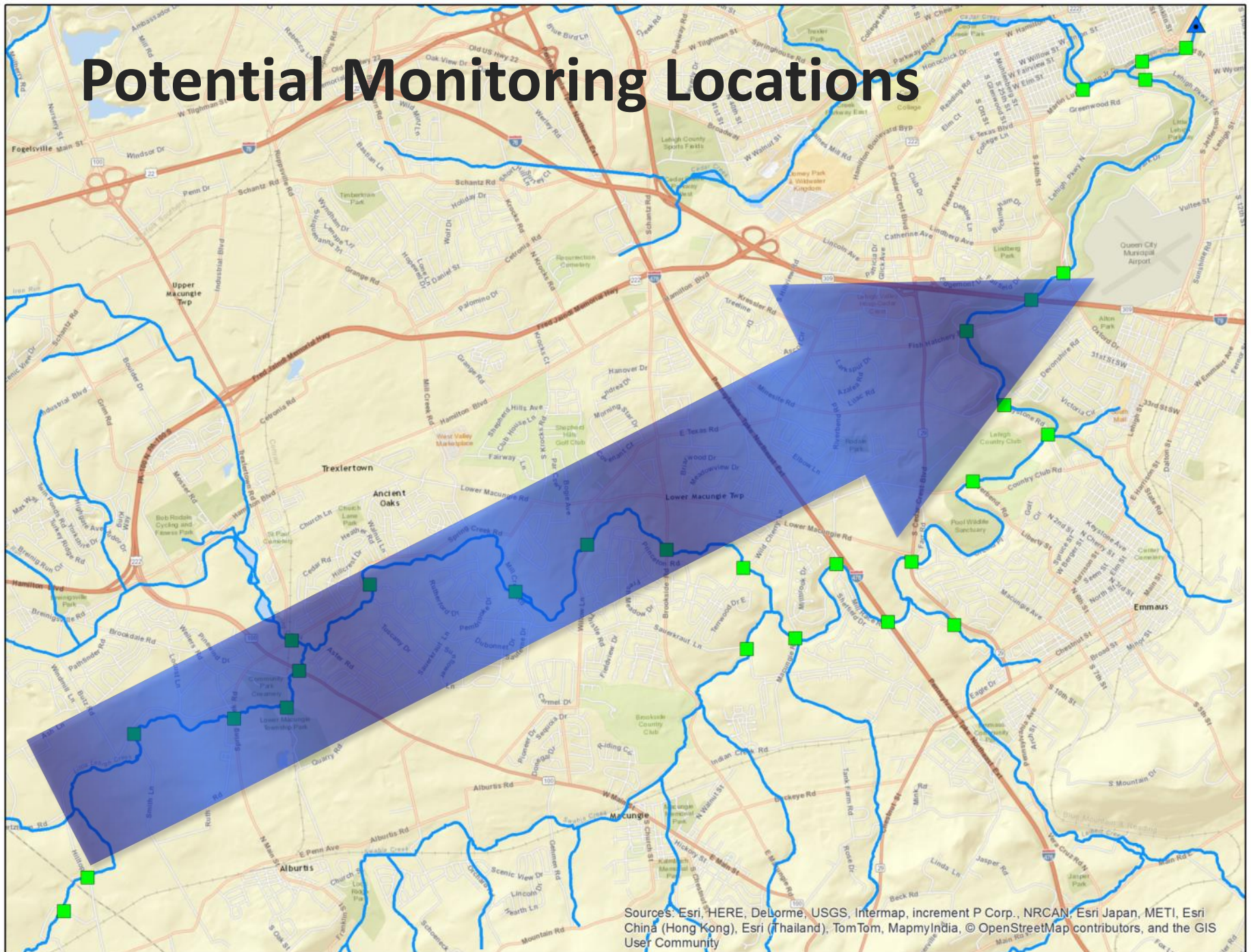
# Watershed Monitoring Plan Elements

- Project objectives
- Monitoring station locations
- Stream flow monitoring station construction
- Monitoring frequency
- Hyporheic zone mapping
- Hydrologic water budget analysis methodology





# Potential Monitoring Locations



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community