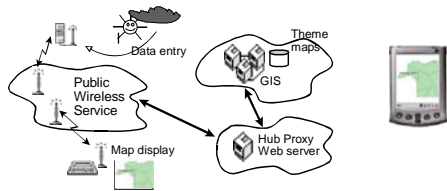


# Web Service Infrastructure for Mobile Web Mapping of Environmental, Health and Climate Change Data

## GIS Web Mapping

An Information system supporting research and public information dissemination on air quality, health and climate change. An initiative of the New Brunswick Lung Association and New Brunswick Climate Change Hub



Development of access to NBCLA's CARIS GIS Spatial Fusion™ service via web service infrastructure by wireless mobile handheld end user devices

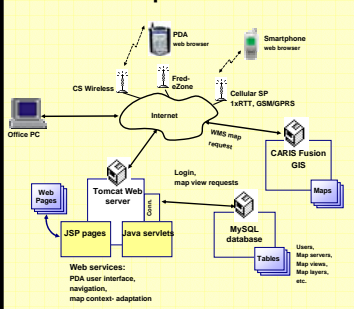
Requirement for adaptation of GIS desktop mapping system to small handheld device formats, such as for PDAs

Low-cost thin client for web map query for GIS theme maps collection of environmental and health data downloadable questionnaires – user feedback

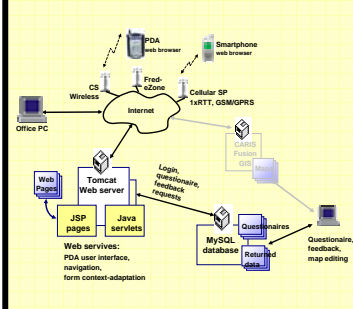
Using wireless public services, such as 1xRTT, GSM/GPRS and WiFi hotzones



### Map View



### User Feedback

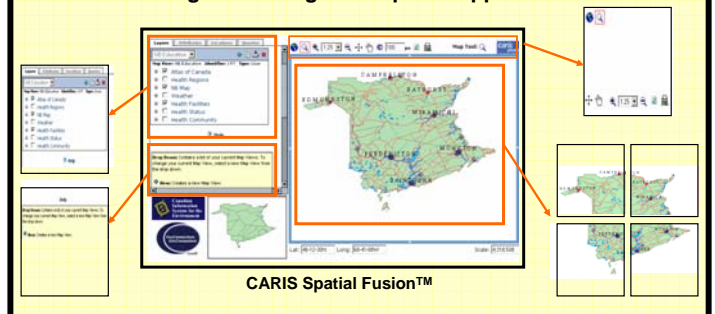


## Mobile Application Design

Design user interfaces for small handheld end user devices with  
 limited display capability  
 limited input facilities  
 limited bandwidth for wireless connections  
 limited battery runtime  
 Render display information on small screens for user-friendly scroll-less viewing  
 Employ user friendly input mechanisms  
 Conserve battery power by allowing short user-program interaction cycles

Small handheld devices and wireless mobility create a challenge when porting existing desktop web applications:  
 move from media-rich desktop web pages to simple small web pages with simple input mechanisms

### Porting an existing desktop web application



- Segment into smaller and simpler web pages
- Group together related information and action items per page
- Use input fields with point-and tap selection of pre-defined replies whenever possible
- Add intuitive navigation tools: bi-directional links, pan, zoom
- Build a "deck of cards" (i.e. cashable web pages)
- Upon request for a web page send "deck of cards" for fast local navigation or individual "cards" as needed



## Prototype Thin Client in Action

### Map View



### User Feedback



Mobile application design for handheld end user devices is supported by Business New Brunswick by Wireless Research Grant Phase 2