**A.G. Wassenaar, Inc.** (AGW), Denver-Based Geotechnical and Environmental Engineering Firm

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**Background**

The residential inspection department of AGW is looking to become paperless when performing their daily inspections.  Currently, their field engineers receive their work orders (printed tickets) for new jobs, copy paperwork for use in the field, fill out worksheet forms during their inspections, drop off field (pass/fail) tickets to their customers, and turn in all of this paperwork to the office for processing.  AGW desires to use tablets in the field so that their field inspectors can receive work orders from their office staff, fill out task-related field-populated forms, then when finished with each task (inspection), push the final results back to the office, all electronically.  In order for this to happen, a front-end web-based platform with a back-end relational database would need to be created by the design team.  This web-based platform would serve to initially take in project information, to schedule new work to the field engineers (pushed to tablets), and to receive the field results from the field engineers (from their tablets), all electronically.

**Goals/Requirements**

A web-based platform and relational database will be created by the design team to enable AGW's administrative staff to enter project information (i.e. address, lot, block, subdivision, customer, AGW project number, etc.), inspection task (i.e. excavation, drain, footing, pier, etc.) and date/time of work to be done.  A scheduling screen would be created by the design team for AGW to be able to schedule daily tasks to the field engineers for same-day work, and next day schedules (i.e. utilizing a "click and drag" technique, or some other scheduling technique to be determined by the design team).  At any time throughout the day, or at the end of the day, this scheduled information would be "pushed" to the appropriate field engineer's tablet for them to receive and use in field-populated field forms.  When the field engineer has filled out the task-specific forms after he completes an inspection, the information will be sent back to the office and a generic "result" email sent to the customer.  Additional features to this web-based platform may be added throughout the duration of the 6-week field session, as time allows.

- Currently, AGW is using Microsoft Access to accomplish this.  However, this is accomplished by printing on paper every day, and the field inspectors are hand-filling out their inspection forms to turn into the office daily.  We would like to eliminate "double-handling" the project information (i.e. re-writing the project information that is obtained on the field tickets onto their field forms and pass/fail tickets), and eliminate the use of paper by using the tablets.  Examples of this procedure and the actual Microsoft Access program will be made available to observe and mimic when developing the new web-based platform.

**Resources Provided and Requirements**

A tablet will be provided for use during the 6 week program, for use when testing and debugging the software to receive and push information from the web-based platform and the tablet.

**Desired Skills**

- Exposure to web technologies (Perl/Java/Python/Javascript/DHTML, and other languages – the project group could choose).
- Ability to test and debug code.
- Attention to detail and interpersonal skills (working with AGW Senior Engineer through phone, emails, meetings).
- Use of PHP
- Knowledge of database programming (SQL)

**Location**

For the convenience of the students, work can be done on CSM campus in one of the computer labs; however, location is flexible. Weekly meetings with a representative of AGW will be conducted, either on campus or at AGW office, to discuss progress and to answer any questions.

**Internship Possibility**

AGW may offer one potential internship position to continue this project through the remainder of the summer of 2012, after the summer session is complete.

**Questions?**

If you would like to discuss this project more and find out additional information, please email Kenny Broseghini.