

Project Management Plan

Challenges in Latin-American Water Resources 2012: Dominican Republic
Civil and Environmental Engineering, [Brigham Young University](#)
[Team RES \(Rob, Erik, Sam\)](#)

1. General Project Information

a. Team vision statement

We intend to combine our technical, cultural, and collaborative competencies to contribute to water projects in the Dominican Republic.

b. Purpose

The BYU group's purpose is to reassess proposed dam/reservoir sites in the Dominican Republic for technical feasibility. This is a joint effort with the country's federal water agency, [Instituto Nacional de Recursos Hidráulicos \(INDRHI\)](#). For our team in particular, the site of interest is Amina, about 19 miles west-southwest of Santiago de los Caballeros, the largest potential reservoir site in the overall project.

c. Scope

Our evaluation will consider:

- hydrologic characteristics of the watershed
- available data of precipitation and streamflow
- available geospatial data (soil type, land use, elevation, etc.)
- dam site specifications outlined by INDRHI
- water availability and balance
- flood scenarios

2. Affiliations

a. Client/sponsor: [Instituto Nacional de Recursos Hidráulicos \(INDRHI\)](#)

Advisor: Fidel Perez
Email: jfidelp@yahoo.com

Contact: Francisco Suero
Email: fco.suero@gmail.com

b. Sponsor: Department of Civil and Environmental Engineering, BYU

Faculty advisor: Dr. Jim Nelson
Phone: 801.422.7632
Email: jimn@byu.edu

c. Other affiliations:

[Kennedy Center for International Studies, BYU](#)
[Wiedman Center for Global Leadership, BYU](#)

3. Student Team Information

Three BYU students (listed below) comprise our team.

Team Member: Rob Sowby

Role: Team leader

Skills/experience: Previous travel to Latin America; intermediate Spanish; GIS; hydraulic and hydrologic modeling (HEC-RAS, HY-8, WMS, HMS, GSSHA); work background in water-system design and land planning.

Phone: 801.616.1550

Email: rsowby@gmail.com

Team Member: Sam García

Role: Communications and culture expert

Skills: Excellent Spanish and good looks.

Phone: 801.318.1075

Email: eldergarcia7@gmail.com

Team Member: Erik McCarthy

Role: Hydrologic modeling expert

Skills: Experience with 2D and 1D hydrologic and hydraulic modeling. Will lead the group in modeling with HEC-HMS, HEC-RAS, GSSHA, HY-8, and TUFLOW via the SMS and WMS interfaces.

Phone: 480.495.8183

Email: j.erik.mccarthy@gmail.com

4. Work Plan and Schedule

Much of our work will be done at BYU; in March our group will visit the Dominican Republic to conduct on-site investigations and work with the INDRHI team.

a. Watershed characteristics (by Feb. 3)

- Gather DEM, soil type, and land use data (Erik)
- Use WMS to delineate watershed; compare to INDRHI's (everyone)
- Compute watershed parameters (everyone)

b. Climate and flow regime (by Feb. 10)

- Collect pertinent precipitation data from INDRHI (Rob)
- Find extreme precipitation values
- Use WMS to analyze precipitation data (mean values by Thiessen polygons) (Feb. 10)
- Analyze streamflow records at site; compare to monthly averages by INDRHI (Rob)
- Examine long-term flow data
- Correlate rainfall and discharge data

c. Hydrologic model (by Feb. 17)

- Develop HMS model from previous data
- Subdivide watershed based on maximum size
- Calibrate model with available data

d. Dam site characteristics (by Feb. 24)

- Delineate reservoir surfaces; develop elevation-area-volume curves
- Consider dam structure and spillway in case of probable maximum flood (PMF)
- Examine or develop flow-duration curve

e. Water availability and water balance (by Mar. 2)

- Examine drought periods and assess dam capacity and water demands for irrigation, municipal water supply, and hydropower as specified by INDRHI

e. Flood control (by Mar. 9)

- Determine maximum probable flood at site
- Delineate floodplain extents of flood-prone areas for communities (HEC-RAS or GSSHA model)

5. Communication

Our team will meet at least once weekly (Friday afternoons in 300 CB) leading up to the trip. Otherwise, each of us will work independently and communication will proceed via email or this website. Each team member will track his time with the site's Time Tracker, and updates will be posted regularly under Project Updates.