HOW TO EXPAND AWARENESS OF WATER QUALITY TO LOCAL CITIZENS

HAMLINE UNIVERSITY
NSEE PROGRAM
EXPERIENCE
• 25 YEARS OF ENVIRONMENTAL / WATER QUALITY WORK EXPERIENCE
• 9 YEARS OF COLLEGE TEACHING EXPERIENCE (ENVIRONMENTAL)

EDUCATION
• BS - ENVIRONMENTAL SCIENCES – SOUTHWEST TEXAS STATE UNIVERSITY
• MS – LAND DEVELOPMENT AND MANAGEMENT – TEXAS STATE UNIVERSITY

CERTIFICATIONS
CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC)
CERTIFIED INSPECTOR IN SEDIMENT AND EROSION CONTROL (CISEC)
NEW BRAUNFELS IS ONE OF THE FASTEST GROWING CITIES OVER THE LAST FIVE YEARS
ENVIRONMENTAL STANDARDS NOT KNOWN TO THE GENERAL PUBLIC AND SCHOOLS

Based on research (Staats, Harland & Wilke, 2004), many standards in environmental are not known in local schools in Texas.

Having a environmental certification program has shown potential to increase awareness based on what Bennett (2005) has said.

Having teachers become fully vested in the environmental awareness and believe in what they are teaching as that is most effective based on Ko and Lee (2003)
PROBLEMS WITH THESE CITY AND LOCALLY SPONSORED CHILDREN EDUCATION PROGRAMS

CITY PARKS PROGRAMS THAT ARE EXISTING BUT NOT COORDINATED WITH LOCAL SCHOOLS

MASTER NATURALISTS/WATER QUALITY EXPERTS COORDINATE WITH THESE PROGRAMS LOCALLY AND REGIONALLY BUT DO NOT COORDINATE WITH LOCAL SCHOOLS OR NEIGHBORHOODS

EXPANSION AND CROSSOVER OF THESE EXISTING PROGRAM FROM WEEKEND PROGRAMS TO SCHOOL SPONSORED PROGRAMS IS A SIMPLE TASK FOR CITY TO WORK OUT DETAILS
OUTDOOR LEARNING ACTIVITIES

OLIVERIA ET AL’S (2009) SHOWS THAT HAVING STUDENTS OUTDOORS TO INTERPRET AND APPLY CONCEPTS WILL ACCELERATE LEARNING IN ALL FIELDS RELATED TO ENVIRONMENTAL INTERACTION WITH THE OVERALL ECOLOGY IN VARIOUS SETTINGS STIMULATES UNDERSTANDING ON THE INTER-CONNECTIVITY OF THE ECOSYSTEM
THESE ITEMS LISTED BELOW CAN BE SHOWN AND APPLIED WITH OUTDOOR ENVIRONMENTS

- Waste Recycling
- School Grounds Wildlife Study
- Local Study of the Living Pollution
- Local Study of the Built Environment
- Renewable and Non-Renewable Energy Sources
- Energy Conservation
- Endangered Species
- Conservation of Foreign Ecosystems, e.g. Rainforest, Coral
- Climate (Global Warming, Acid Rain, Ozone)
- Transport and the Environment
- Animal Welfare Issues
- Population
- Conservation of Local Ecosystems (Littledyke 1997)
MASCOTS

• ABRUSCATO (2000) HAS SHOWN THAT MASCOTS ARE VERY EFFECTIVE IN PROMOTING ENVIRONMENTAL EDUCATION IN AN POSITIVE LIFE

• SALLY THE SALAMANDAR (SAN MARCOS) AND SCOUT THE GREEN RACCOON (NEW BRAUNFELS) COVER MULTIPLE ENVIRONMENTAL AND WATER PROGRAMS ACROSS A WIDE SPECTRUM IN EACH OF THEIR RESPECTIVE CITIES
SURVEY HANDOUT TO STUDENTS

RATE THE QUESTIONS BETWEEN 1-5 (1=STRONGLY AGREE 5=NOT AT ALL AGREE)

MY ACTIONS AFFECT THE QUALITY OF THE WATER IN MY WATERSHED.

MY ACTIONS AFFECT THE QUALITY OF WATER IN OTHER WATERSHEDS.

CLEAN, FRESH WATER MUST BE USED IN MODERATION.

IT IS SAFE TO DRINK THE WATER FROM ANY FAUCET.

WATER IS A RENEWABLE RESOURCE.

ALL INDIVIDUALS HAVE ACCESS TO CLEAN WATER.

ONLY BOTTLED OR PROPERLY DISINFECTED WATER SHOULD BE USED FOR COOKING, BRUSHING TEETH, AND DRINKING.

CONTAMINATED SURFACE WATER AND POOR SANITATION CONTRIBUTE TO THE TRANSMISSION OF WATER BORNE DISEASE.

IMPERVIOUS SURFACES TYPICALLY HAVE THE HIGHEST RATES OF RUNOFF.

BOILING WATER CAN ELIMINATE THE CHANCE OF WATER BORNE DISEASE.

WATER BORNE DISEASE CAN BE ELIMINATED BY BOILING WATER.

BY TREATING WATER WITH CHLORINE AND IODINE, WATER BORNE DISEASE CAN BE ELIMINATED.

SOME GERMS AND CHEMICALS OCCUR NATURALLY IN WATER.

STANDING WATER CREATES A BREEDING GROUND FOR DISEASE CARRYING MOSQUITOES.

THE CLEAN WATER INDUSTRY PLAYS A VITAL ROLE IN MY DAILY LIFE.

THE CLEAN WATER INDUSTRY PLAYS A VITAL ROLE IN THE DAILY LIVES OF INDIVIDUALS AROUND THE WORLD.

THERE ARE MANY CAREER OPPORTUNITIES IN THE CLEAN WATER INDUSTRY.
DAILY OUTDOOR PROJECTS

**DAY 1** - WATER QUALITY PRESENTATION(S) FOR THE LAKE AND RIVER SYSTEM
VISITING LECTURE / PRESENTATIONS FROM LOCAL WATER QUALITY ORGANIZATIONS (GOVERNMENTAL).

**DAY 2** - FIELD TRIP TO THE LAKE / PARK TO ASSESS AND APPLY WHAT WAS DISCUSSED IN THE PREVIOUS 2 LECTURES ON WATER QUALITY AND SPRING FLOW.

**DAY 3** - DISCUSSION/PRESENTATION ON AQUIFER AND ASSOCIATED RIVER SYSTEMS (BIG PICTURE)
VISITING LECTURE OR PRESENTATION FROM GUADALUPE BLANCO RIVER AUTHORITY (GBRA)

**DAY 4** - FIELD TRIP TO THE LAKE / PARK TO APPLY NEW INFORMATION ON WHAT WAS DISCUSSED IN THE PREVIOUS 4 PRESENTATIONS AND INCORPORATE ALL THAT INFORMATION TOGETHER

**DAY 5** - RESEARCH ALL THE AVAILABLE INFORMATION, SEE WHAT COULD HARM AN ECOSYSTEM LIKE THIS ONE.
GOVERNMENTAL EXPERTS DISCUSS THE BIG PICTURE OF WATERSHED REGION TO LOCAL STUDENTS
RESULTS FOR COMMUNITY

INITIAL AWARENESS ACROSS ALL SPECTRUMS IN REGARDS TO WATER QUALITY AND ECOSYSTEMS

EVERYONE (NOT JUST SCHOOL CHILDREN) DOING A POSITIVE PART TOWARDS IMPROVING WATER QUALITY THROUGHOUT THE REGION

CONTINUAL GROWTH IN ENVIRONMENTAL EDUCATION IN LOCAL SCHOOLS AND COMMUNITY BUSINESS

CHANGING BEHAVIOR TOWARDS THE POSITIVE OUTCOME FOR THE ENVIRONMENT