

ENVIRONMENTAL STEWARDSHIP ADVISORY COMMITTEE

JANUARY 24, 2018



FEATURED GUEST

Dr. Michael E. Webber

- Deputy Director, Energy Institute
- Co-Director, Clean Energy Incubator
- Josey Centennial Fellow in Energy Resources
- Associate Professor, Mechanical Engineering



Interactive Tools to Enhance Environmental and STEM Education

AISD Environmental Stewardship Advisory Committee

Michael E. Webber

Austin, TX

January 24, 2018

 @MichaelEWebber



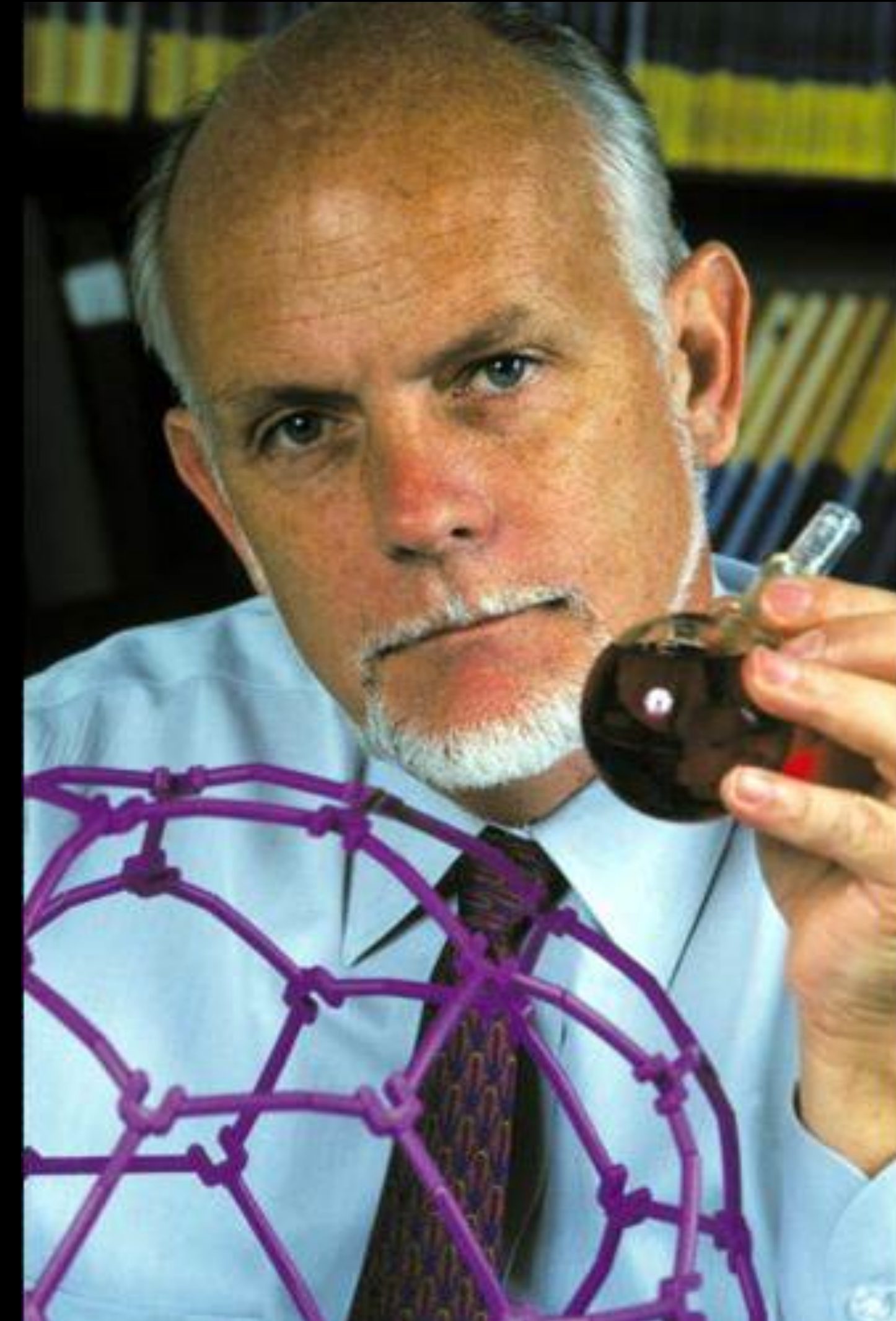
Webber Energy Group

THE UNIVERSITY OF TEXAS AT AUSTIN

Rick Smalley Was A Brilliant Thinker

- Nobel Laureate
- Discovered “Buckyballs”

In the last years of his life, he gave many speeches with a list of the world’s top 10 challenges



Energy Is At The Top of Rick Smalley's List of Humanity's Ten Grandest Challenges

1. Energy
2. Water
3. Food
4. Environment
5. Poverty
6. Terrorism & War
7. Disease
8. Education
9. Democracy
10. Population

Energy and Water: The World's Two Critical Resources

Water = Life

Energy = Wealth

Energy is Wealth

- Clean water
- Productive industry
- Mobility
- Comfortable buildings
- Abundant food



The Energy Problem Is Comprised of Three Converging Crises

Resource Depletion



Ficelloguy at the English language Wikipedia

Environmental Degradation



U.S. Navy

National Security



U.S. Air Force

All three are related and amplify each other.

Education Is One Of My Family's Passions

- Father is a Professor
- Sister is elementary art teacher at Hill Elementary in Austin, TX
- Sister-in-law is a 6th grade science teacher in Ennis, TX
- Mother-in-law is a (retired) 6th grade science teacher in Ennis, TX
- Wife is on the Eanes ISD school board in Austin, TX

Combining Education With A Desire to Manage Resources Wisely Is My Job and Life Mission

But, Students Learn Differently Than My Generation, So How Should I Teach?

Energy and Environmental Education Is Ripe For Innovation

nature International weekly journal of science

Sheril R. Kirshenbaum & Michael E. Webber

Nature **478**, 37 (06 October 2011) | doi:10.1038/478037a

THE CHRONICLE
of Higher Education

January 22, 2012

It's Time to Shine the Spotlight on Energy Education

By Michael E. Webber and Sheril R. Kirshenbaum

I Have Many Goals With My Teaching

- Global mindset
- Long-term mindset
- Systems-level thinking: everything is connected

Energy and Environmental Literacy Go Hand-In-Hand with STEM Education

We Need Multidisciplinary Teaching

- Critical thinking: liberal arts and humanities
- Creative thinking: fine arts
- Analytical thinking: STEM

STEM Education Needs to Evolve To STEAM Education

EARTH

without

ART

is just

EH

Solution: Make Interactive Teaching Tools

Use modern tools for digital natives

My Work On Several Online/Multimedia Educational Initiatives Colors My Outlook

- Radio
 - NPR (KUT): Energy and popular culture
 - Interviews for journalists
- Television
- Online
- New Digital Platform: The Course App

Several Television Initiatives Executed Or In Development

- Energy at the Movies
 - Nationally syndicated on PBS 2013-2015
 - Reached more than a third of nation's households, 100k+ viewers
- Thirst for Power: Energy, Water and Human Survival
 - Based on book of same name (Yale University Press)
 - Scope: 1-hour special
 - Targeted release: Fall 2018
 - Distribution partners: TBD (but aiming for PBS, Discovery, Netflix, etc.)
- Power Trip: The Story of Energy
 - Based on book of same name (Basic Books)
 - Scope: Water, Food, Wealth, Cities, Transport, Security
 - Targeted release: 1H 2019
 - Distribution partners: PBS (national), United Airlines, Scientific American

Several Online Initiatives Executed Or In Development

- PBS LearningMedia: The Math of Energy
 - Short videos on math exercises for energy problems
- Energy101 MOOC (Massive Open Online Course), Fall 2013
 - Enrollment: 44,000+ at start, ~5000 finished
 - Participants from 6 continents
- Online calculators and teaching tools
 - Energy efficiency, energy costs, power markets, enviro impacts
 - <http://www.Energy101.com>
 - Power plant costs, enviro costs, geographic variabilities in power
 - <http://calculators.energy.utexas.edu>

Several Course Apps Executed Or In Development

- Energy101: Energy Technology and Policy
 - Made at UT, released in 2014, Distributed by DISCO Learning Media
 - Adopted by Stanford, Duke, UT Austin, U. Maryland, U. Calgary, Colo. St.
 - Good fit for 9-12th grade, adopted by several high schools
 - SECO sponsorship: Make teacher's guides, TEKS/AP alignment, distribution for more high schools
- Resourcefulness
 - Based on Thirst for Power: Energy, Water and Human Survival
 - Good fit for 6-10th grade, adopted by several school districts
 - Available for free via corporate sponsorship from Itron, Inc.

Energy 101

Energy Technology and Policy

Dr. Michael E. Webber
The University of Texas at Austin

Foreword

Section I
Introduction and the Basics
of Energy

Section II
Fossil Fuels

Section III
Renewable Energy

Section IV
Nuclear Energy

Section V
Electricity

Section VI
Transportation and the Built
Environment

Section VII
Energy Policy

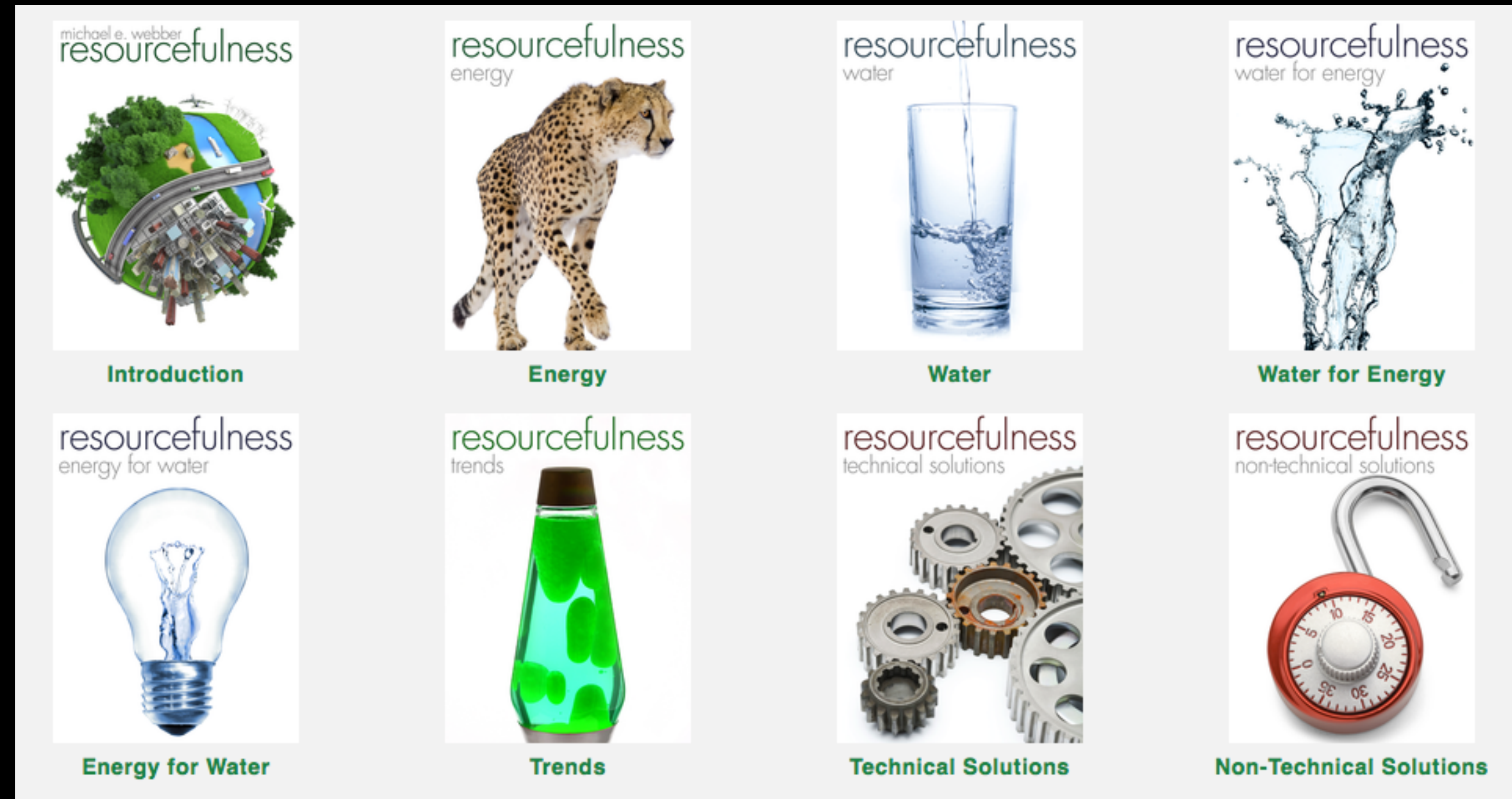
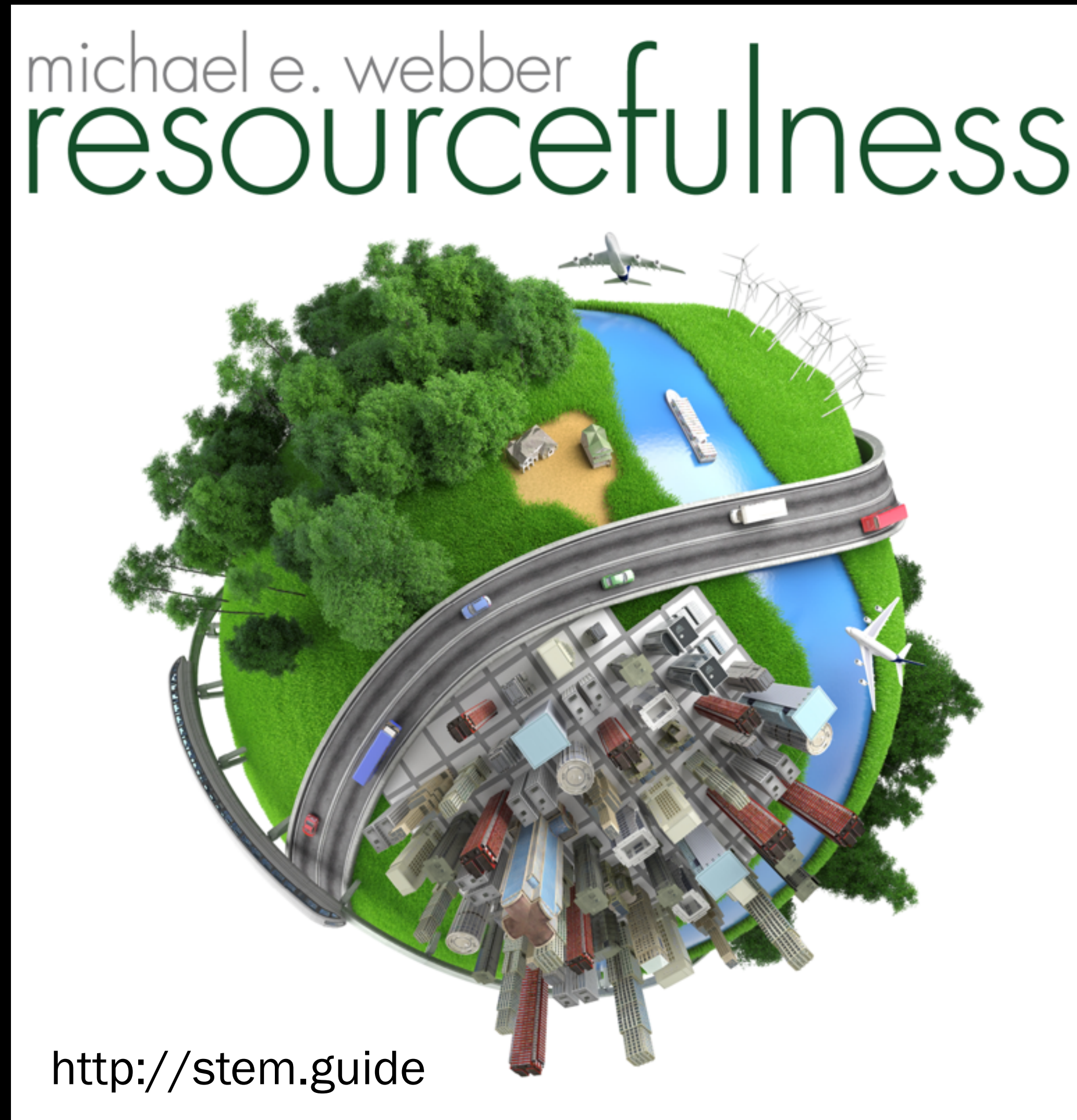
Section VIII
Energy and ...

We Created Some Online Resources at www.energy101.com to go with the Course App



The screenshot shows the top portion of a website. At the top left is the Webber Energy Group logo, which consists of a blue circle containing a white stylized 'W' with a small ampersand, followed by the text 'Webber Energy Group' and 'THE UNIVERSITY OF TEXAS AT AUSTIN' in smaller letters below it. The main content area features a dark background with abstract, glowing blue and orange lines on the left. The title 'Energy 101' is displayed in a large, bold, white font, with 'Energy Technology and Policy' in a slightly smaller white font below it. Underneath the title, it says 'Dr. Michael E. Webber • The University of Texas at Austin'. At the bottom of the screenshot is a horizontal navigation bar with six orange buttons containing the following text from left to right: 'Home', 'Course App', 'Professional Education', 'Massive Open Online Course', 'Free Educational Tools', and 'Web App'.

Next: Make more course apps



Teaches key concepts on energy & water for K-12, industry, gov't, college and general public

Corporate Partnerships Are Growing In Importance

- Working with DISCO Learning Media & Itron, Inc. to make and distribute to school districts
- *Resourcefulness* is available for free for anyone who wants it
<http://stem.guide>



Other Course Apps In Development With SECO Sponsorship

- *Power Trip: The Story of Energy*
 - Targeted at grades 6-8
 - Narrative-based
- *WattWatchers*
 - Targeted at grades K-5
 - Activity-based
- We want partner schools

Online/Multimedia Educational Initiatives Achieve Worthwhile Outcomes

- Improved teaching
 - Better organized presentation
 - Internationalized context
 - Self-contained teaching tools
 - Better assessment
- Improved learning
 - Interactive, fun tools
 - Students get more ownership of learning

Digital Assessment Is Important But Isn't Solved Yet

We teach for free, they pay us to grade

Teaching keeps us young, grading makes us old

Questions?

Michael E. Webber, Ph.D.

Deputy Director, Energy Institute
Co-Director, Clean Energy Incubator
Josey Centennial Professor in Energy Resources
Professor, Mechanical Engineering
The University of Texas at Austin

webber@mail.utexas.edu
www.webberenergygroup.com



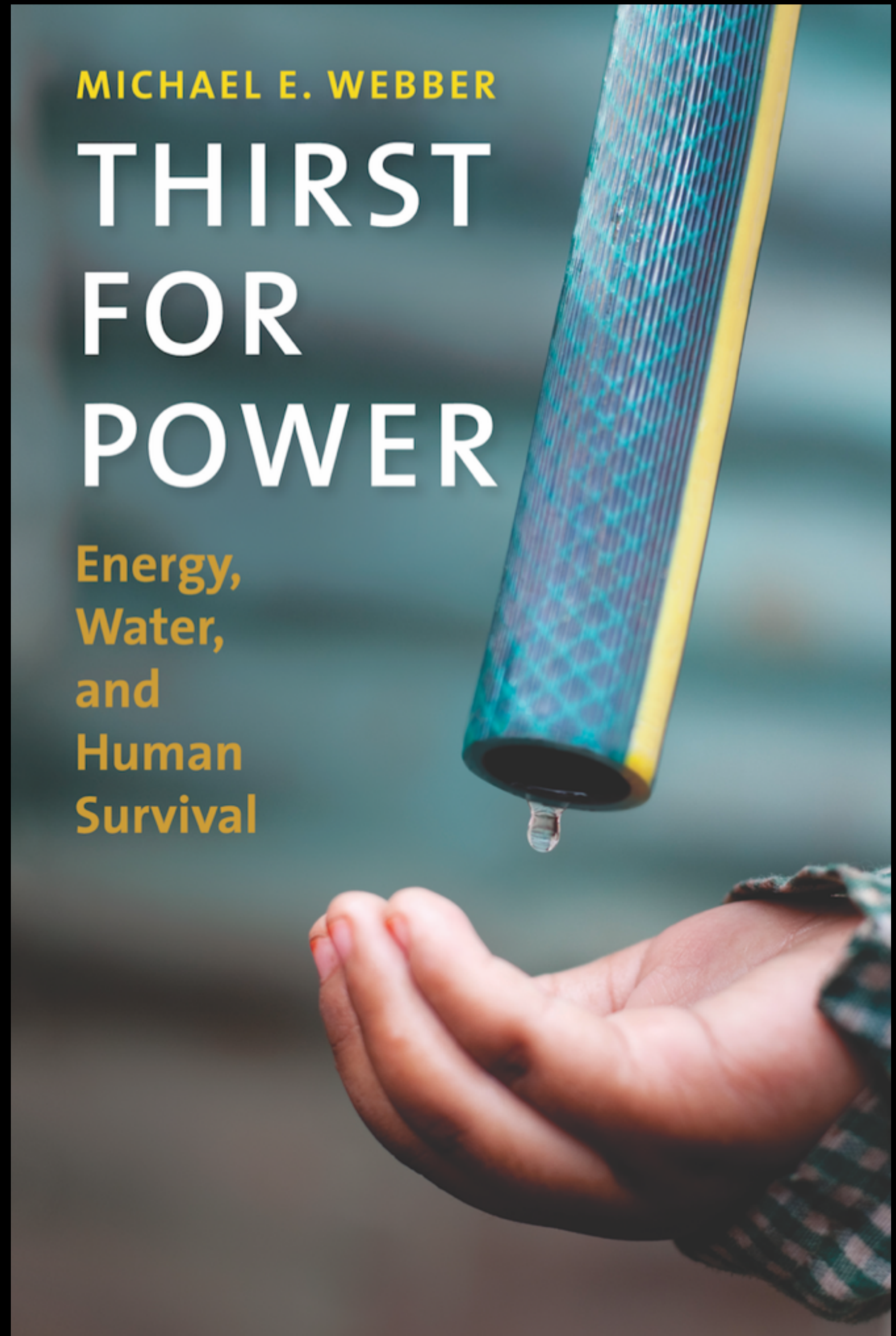
Webber Energy Group

THE UNIVERSITY OF TEXAS AT AUSTIN

MICHAEL E. WEBBER

THIRST FOR POWER

Energy,
Water,
and
Human
Survival





RECOGNITION + ACCOLADES

Q&A: EMPOWERING STUDENTS TO DRIVE SUSTAINABILITY DISTRICT-WIDE

Ed Circuit December 18, 2017 |

In this Q&A, you will hear a unique and insightful perspective on sustainability and environmental education from Texas educator Anne Muller. Anne was a middle school science teacher in the Austin Independent School District for five years and now is in the district-wide role of Outdoor Learning Specialist. This position is part of the Science Curriculum Department and has been in place for six years.

In this role, Anne runs the district's demonstration habitat garden, which is used for district-wide field trips and teacher trainings. She helps integrate outdoor connections into the district curriculum and promotes partnerships with community partners to support teachers and schools. She is passionate about making sustainability a natural part of the education system and the habits that teachers and students develop.



Read on to learn Anne's perspective on the most exciting elements of environmental education, hear about some of the most interesting outdoor initiatives her district has undertaken, and to find out what it means to work with a quality strategic partner like EcoRise. **Q: What are the aspects of environmental education that you are personally most passionate about?**

A: I am extremely passionate about getting kids outside and connected to nature. Many of the students in Austin ISD, not unlike many of their peers nationwide, have a disconnect from nature and spend a large amount of their day using technology. When they get outside for play, their imaginations soar and they can get into deep, meaningful play. It's during this time that they build strong relationships with each other and build important skills like confidence, teamwork, creativity, and more. When kids get outside for learning, the outdoors becomes an extension of the indoor classroom and adds necessary context to bring lessons to life. Suddenly a lesson on photosynthesis takes on new meaning when you see flowers



RECOGNITION + ACCOLADES

Eco Clubs Team Up to Earn Green Flag

BY MIRANDA GERSHONI | Copy Editor

The Green Team and Garden Club are working together to earn a Green Flag from the National Wildlife Federation's Eco-Schools program. The Green Flag is a national recognition awarded to schools who meet certain environmental standards.

Spanish teacher Lawrence Sclerandi has sponsored Garden Club for six years, keeping up with the school garden and getting students involved in planting, harvesting, composting, and

other activities in nature.

"Garden Club was an already established club, so it was easy to incorporate them into the Green Team," Sclerandi said. "Garden Clubbers are hardworking and dedicated to 'La Pacha Mama' so expanding their horizons to incorporate a broader purview was not much of a stretch."

This year Sclerandi decided to lead the Green Team, a club created to advance the school's environmental sustainability goals.

"The mission of the Green Team is to examine the current policies and procedures in place to look for ways to improve our school's efficiency with regards to all things environmental," Sclerandi said. "Part of that includes grounds, which we are trying to make an inviting place for pollinators, with a conscious effort to utilize native species."

Freshman Lorenzo Huerta joined both clubs this year, and has enjoyed the rewarding feeling that comes with growing your own food and making concrete plans to improve the school's ecological footprint.

"I like the Green Team, it involves more planning [than Garden Club], although you get to engage with the community more, and you actually get to see results and things get done," Huerta said.

Eco-Schools prioritize categories such as waste & consumption, healthy living, schoolyard habits, biodiversity, healthy schools, and sustainable food.

"In order to obtain Green Flag status, we must complete a series of audits into energy and wildlife and other 'green' aspects of our school, to see how we can make our campus more environmentally friendly," Sclerandi said. "Then we must put plans in place to improve our environmental footprint."

Students in Garden Club and the Green Team are actively working to meet these goals.

"Right now in Garden Club we are building a monarch garden, so we're moving limestone blocks and we're filing that in with soil. In Green Team, we're actually working towards monarch conservation. So both of them are similar, but they're slightly different in how they approach the problem," Huerta said.



14 | LIFE & ARTS | DEC 2017

DC1



AUSTIN
Independent School District

Sustainability

AISD SUSTAINABILITY UPDATES

DARIEN CLARY

AISD SUSTAINABILITY MANAGER



#AISDGreen
@AustinISDGreen



AISD ED SPECS UPDATE



EDUCATIONAL SPECIFICATIONS

FOR MODERN LEARNING ENVIRONMENTS

Approved by AISD Board of Trustees, Nov. 27, 2017



Green Building

Outdoor Learning



AISD ED SPECS UPDATE



EDUCATIONAL SPECIFICATIONS FOR MODERN LEARNING ENVIRONMENTS *Approved by AISD Board of Trustees, Nov. 27, 2017*



Green Building



Outdoor Learning



December 18, 2017





AISD ED SPECS UPDATE



EDUCATIONAL SPECIFICATIONS

FOR MODERN LEARNING ENVIRONMENTS
Approved by AISD Board of Trustees, Nov. 27, 2017



Green Building



- Location & Transportation
- Sustainable Sites
- Water Efficiency
- Energy Efficiency
- Materials and Resources
- Indoor Environmental Quality
- Outdoor Learning Environments



AISD ED SPECS UPDATE

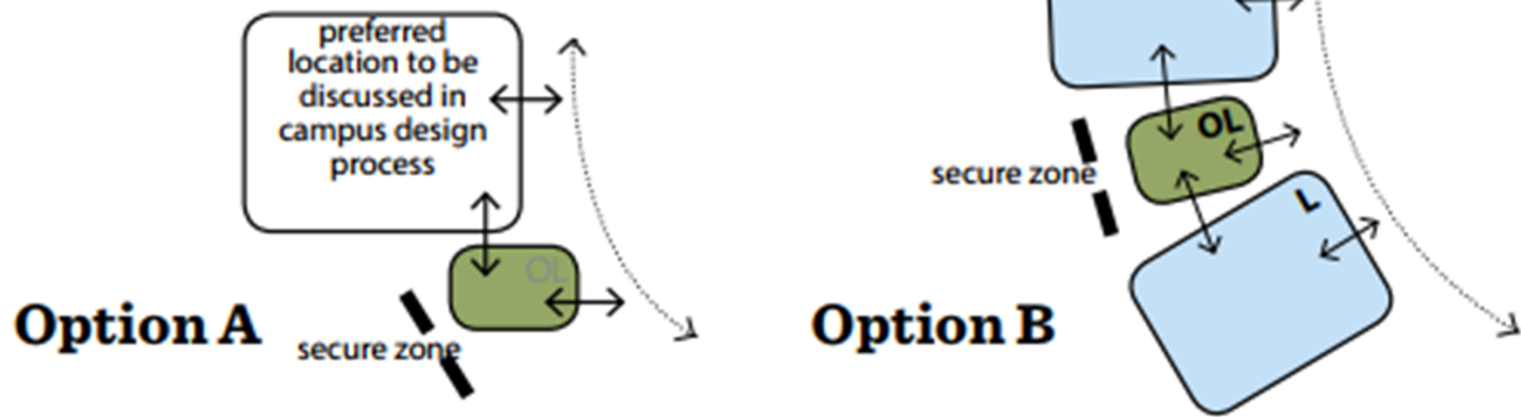
Outdoor Learning



Space Types

Outdoor Learning

- Outdoor classroom
- Nature loop Trail
- Green stormwater infrastructure & cisterns
- Wildlife habitat
- Trees
- Vegetable & Pollinator Gardens
- Nature play areas
- Community artwork





AISD ED SPECS UPDATE



EDUCATIONAL SPECIFICATIONS

FOR MODERN LEARNING ENVIRONMENTS
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Read the details!

[austinisd.org/
construction-management/
designinformation](http://austinisd.org/construction-management/designinformation)





AISD BOND UPDATES

Bond Approval - 72%

EARLY 2018:

Selection of bond program manager,
bond communications consultant,
and firms for:

Brown ES
Govalle ES
Menchaca ES
Doss ES
Murchison



2017
BOND
PROGRAM

3 Campus Planning teams:

Eastside Mem ECHS/International HS/LBJ ECHS/Orig Anderson/ALC
Norman Elementary/Sims Elementary
Zavala Elementary, Metz Elementary, and Sanchez Elementary



AISD BOND UPDATES

OPENING 2019:

- Bowie HS Parking Garage

OPENING 2020

- TA Brown ES
- Menchaca ES
- Govalle ES
- New Blazier ES
- New SW ES
- LASA
- Norman/Sims Modernization



OPENING 2021:

- Murchison MS
- Rosedale School
- LBJ ECHS Expanded Career Launch
- Metz ES, Sanchez ES, Zavala ES Modernization

OPENING 2022

- Bowie HS Expansion
- Casis Elementary
- Brentwood Elementary
- Health Professions School
- Hill Elementary
- Austin High School Expansion
- New NE Middle School



AISD BOND UPDATES

<https://www.austinisd.org/bond>

November Board Bond Update (pdf)



Bond 2017 Implementation Plan

Construction Start Schedule by Fiscal Year (pdf)

Comprehensive Project Detailed Schedule (pdf)

Comprehensive Project Summary Schedule (pdf)

View 2017 Bond Projects by School & Facility

Stay
in the
loop!



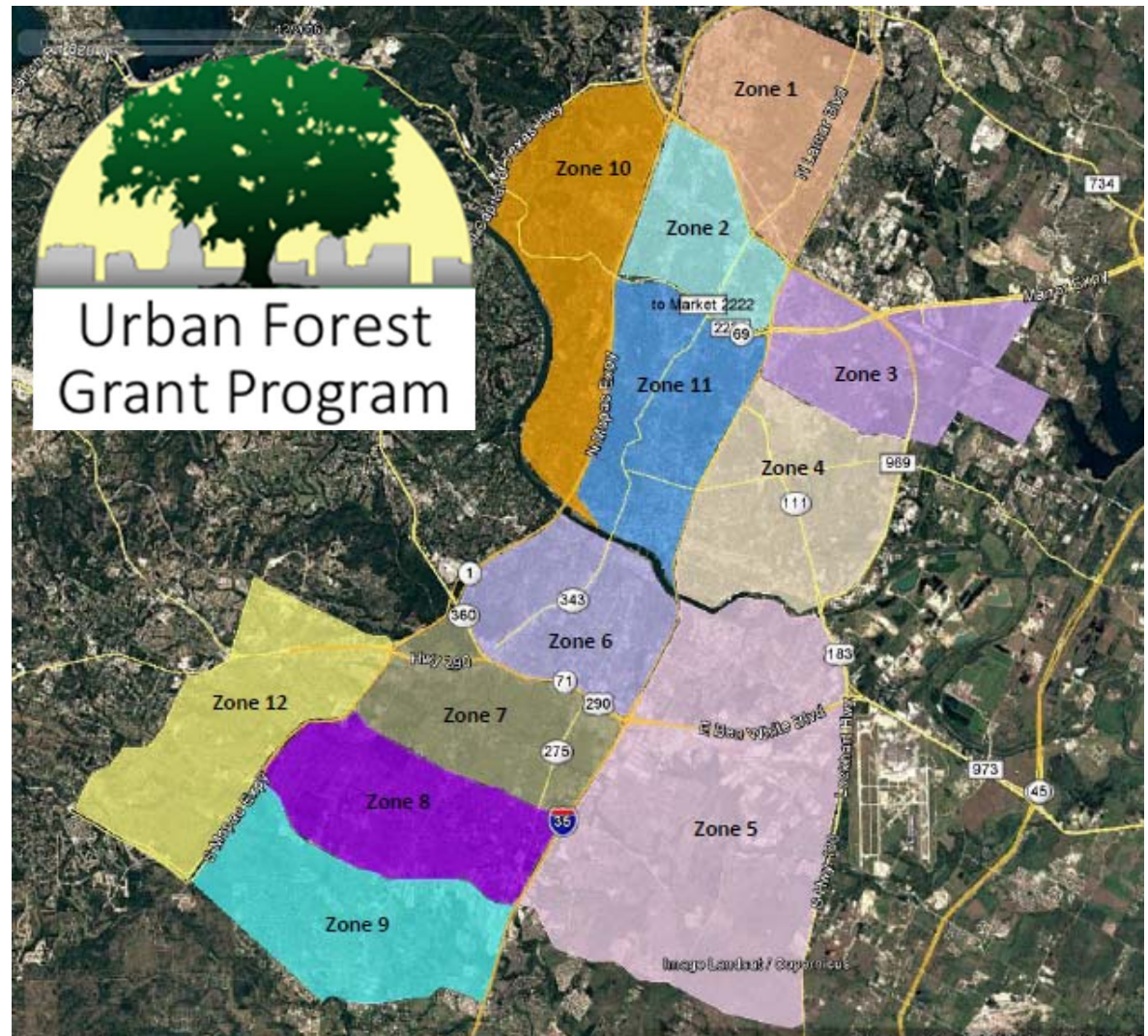
#AISDGreen
@AustinISDGreen



AISD URBAN FOREST

Tree Inventory (through June 2018)

- Identify tree care needs
- Locate and identify heritage trees
- Prioritize hazard tree risk mitigation
- Identify tree-deficient schools for future plantings
- Enable the District to strategically plan for long-term urban forest tree care and hazard prevention
- Grant Priority: Zones 1-5





AISD URBAN FOREST

#AISD Green Austin ISD Green
@AustinISDGreen

Voted 2nd Best Tree in 2011, this Live Oak stands tall at Bowie High School and shades the courtyard for all. According to the EPA, shaded surfaces can be 20–45°F cooler than the peak temperatures of unshaded materials. That makes a big difference for us under the hot Texas sun!



1:50 PM - 11 Jan 2018



Urban Forest
Grant Program



AISD URBAN FOREST

~~565~~ **1196** trees
inventoried to
date!



Urban Forest
Grant Program

#AISD
Green

Austin ISD Green @AustinISDGreen · 13 Dec 2017

Looking for fall foliage? Check out the sweet gum trees @ReaganECHS! This beauty was recently added to the AISD tree inventory, part of our Urban Forest Initiative. #naturerocksAustin #aisdproud #AISDgreen @CityArboristATX



DC1



AUSTIN
Independent School District

Sustainability

SUSTAINABILITY ACTION AREA UPDATES

SUBCOMMITTEE LEADERS



#AISDGreen
@AustinISDGreen

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Independent School District

SUSTAINABILITY ACTION AREA UPDATES: ENERGY & WATER

JESSICA WILSON



#AISDGreen
@AustinISDGreen



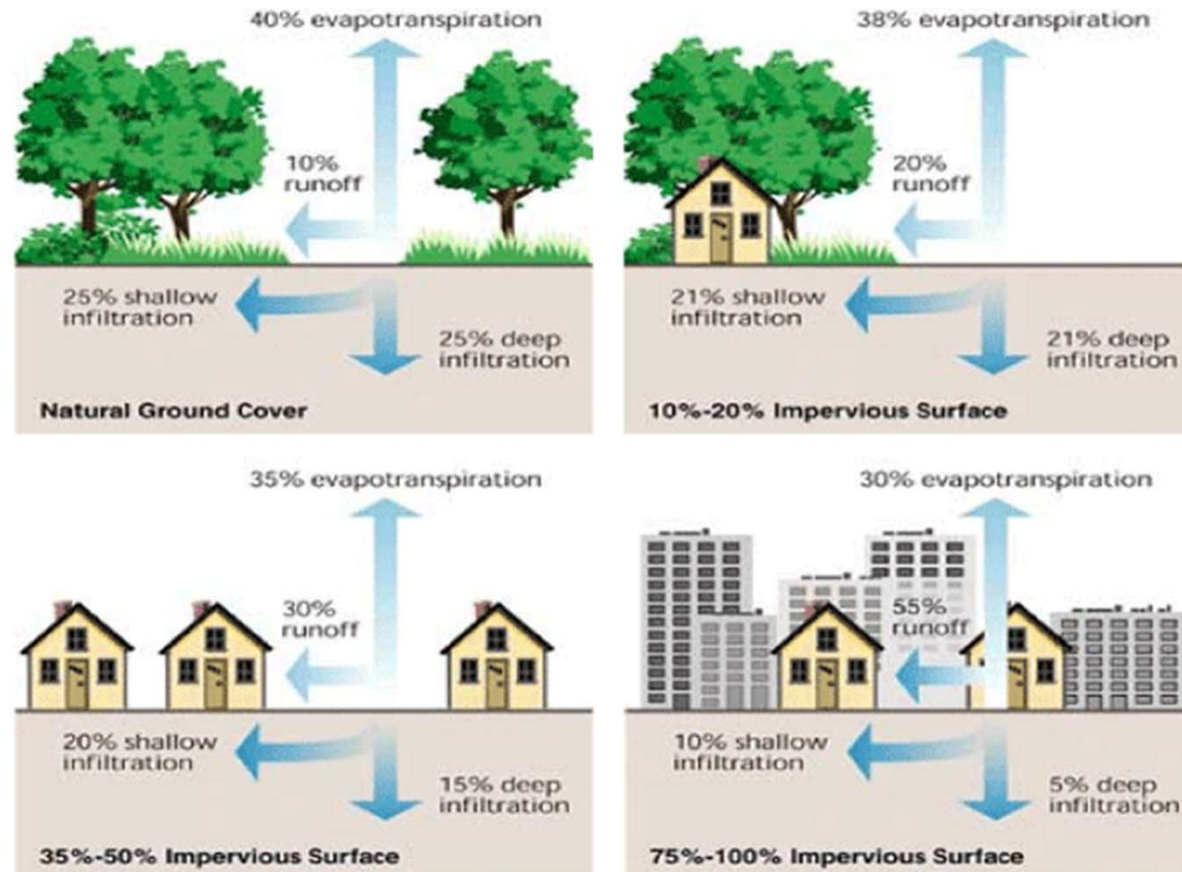
Green Stormwater Infrastructure & AISD/CoA Collaborations Overview

AISD ESAC Meeting

January 24, 2018

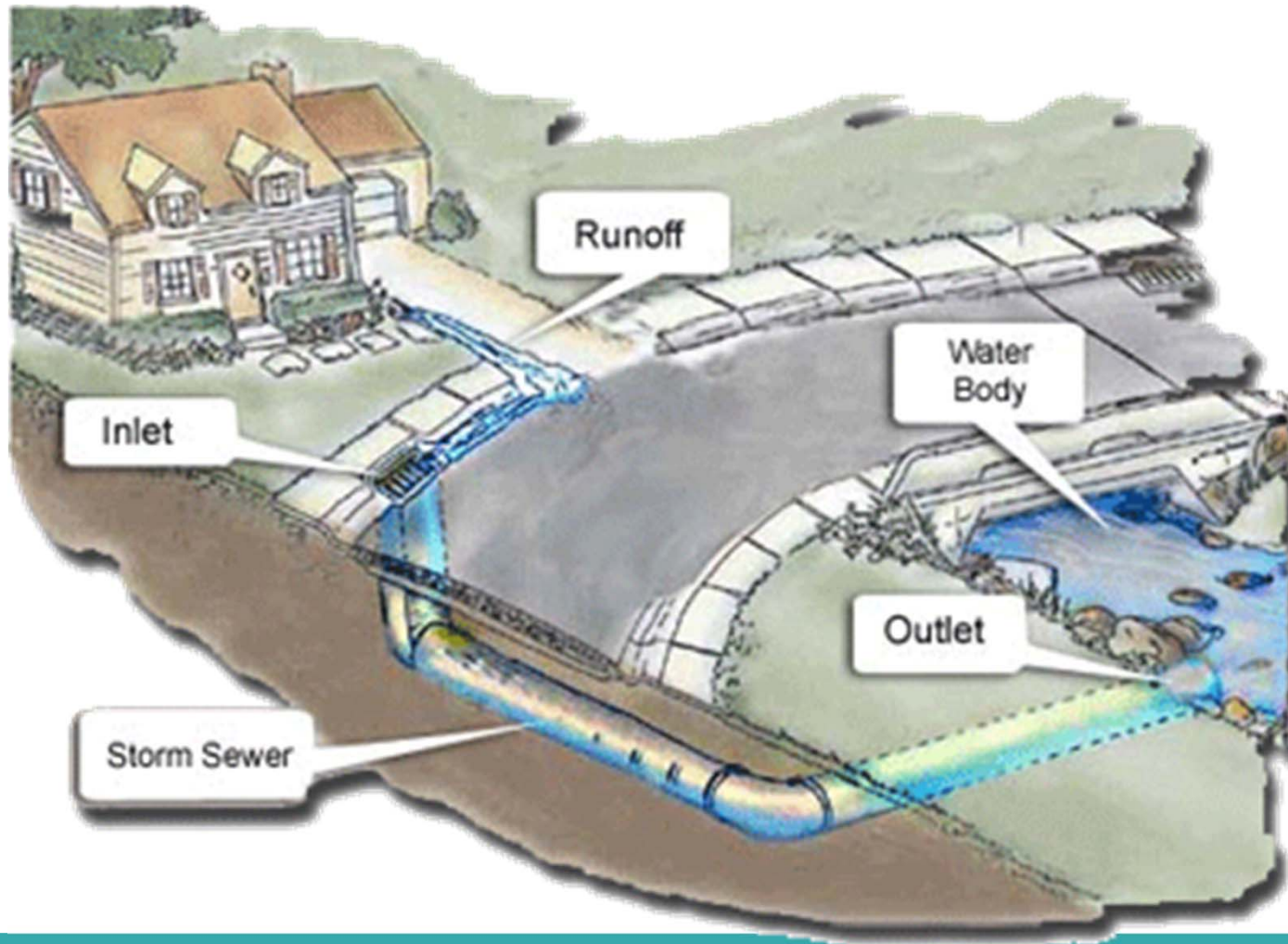


Urban Hydrology





Traditional Stormwater Treatment





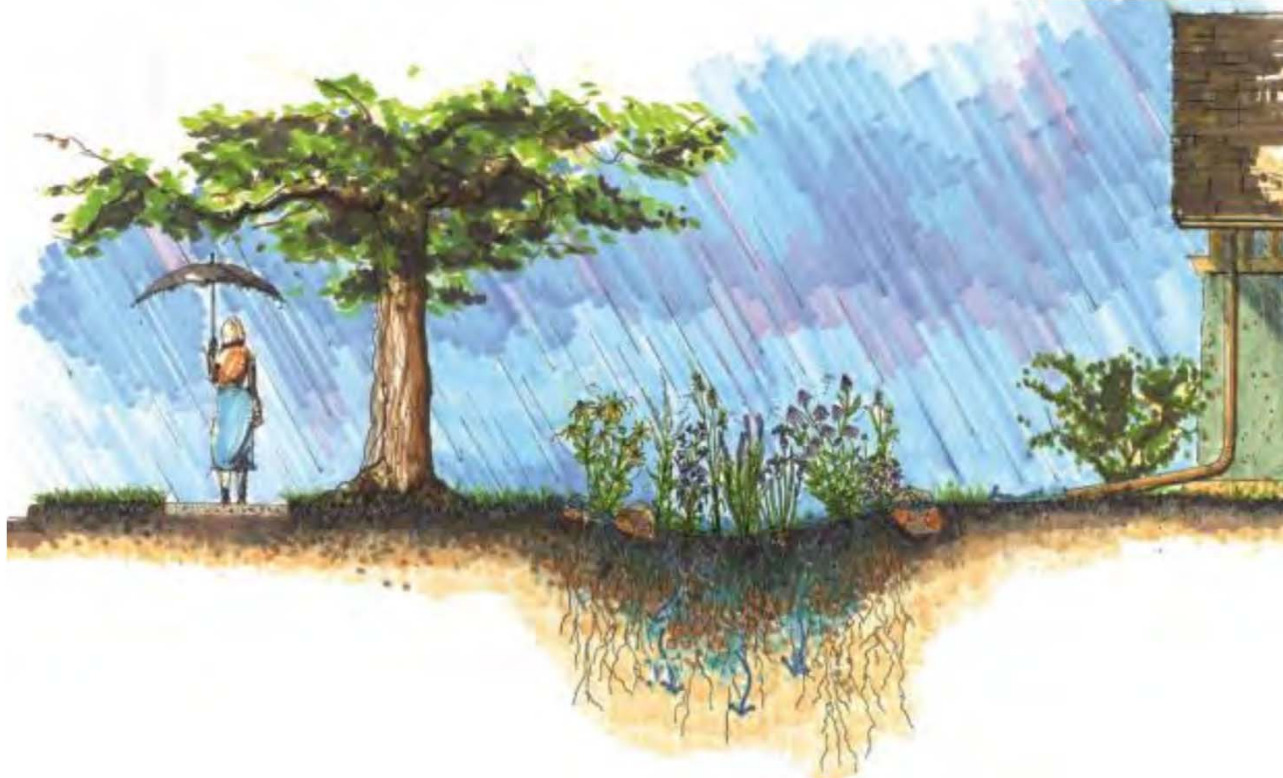
Erosion Issues





How do we change? Mimic nature & use rainwater as a resource

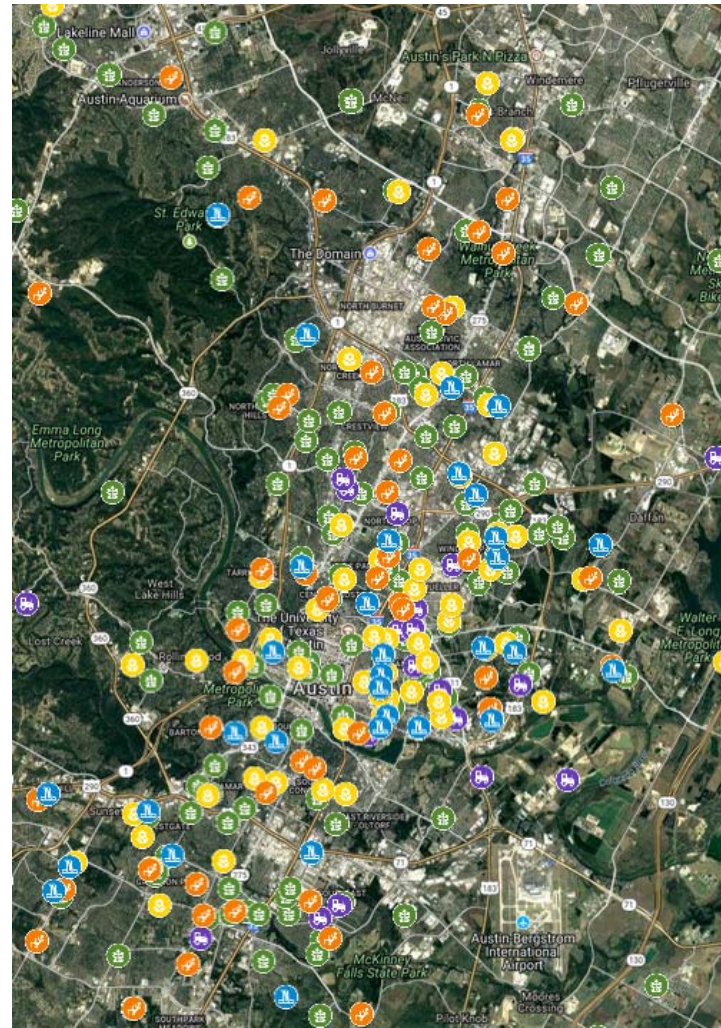
This can also help address local erosion and flooding issues on campuses & provide rainwater for gardening.





Green Stormwater Infrastructure (cisterns, rain gardens, berms, etc) at schools

- 40+ listed at greeningyourschoolyard.com
- Ways CoA provides support:
 - Bright Green Future Grants
 - UTCE171P Collaboration
 - Demonstration Projects: Barrington (CCCN) & Reilly (Rain Catcher Pilot Program)
 - Educational materials: www.austintexas.gov/raingardens





Bright Green Future Grants



Overview

- led by the City of Austin's Office of Sustainability
- www.austintexas.gov/brightgreenfuture
- \$3K max

What has the Watershed Protection Department done to date related to rainwater?

- 30+ projects funded
- \$69K+ invested



UTCE171P Collaboration

Overview

- WPD & AISD select participating campuses
- UT Civil Engineering design stormwater solutions
- Final reports are shared with AISD campus, Environmental Water Resource Institute & non-profits to bring the reports to life

Accomplishments

- Designs for 14 campuses, 6 campuses implementing 1 or more designs
- ~14.5K gallons of rainwater being used as a resource





Demonstration Project Example Barrington Elementary



- Cities Connection Children to Nature Pilot Site
- One 1,500 gallon passive drip cistern + two large rain gardens
- Rain gardens adopted by the Monarch Heroes program
- Cistern designed to encourage play and for students to release water
- Upcoming grand opening will include educational models for older students and painting with rainwater for younger kids







We Can Do This!



SUSTAINABILITY ACTION AREA UPDATES: TRANSPORTATION & AIR QUALITY

ROB BOROWSKI



KEY STRATEGY: IDENTIFY, EVALUATE AND IMPLEMENT COMMUTE OPTIONS

Electric Vehicle Charging Stations

- *Summary:* AISD and Austin Energy working to identify locations for a pilot EV charging Program
- *Mobility and AQ subcommittee:* Develop plan/toolkit to communicate to staff, parents and community





KEY STRATEGY: IDENTIFY, EVALUATE AND IMPLEMENT COMMUTE OPTIONS

Make Schools More Walkable, Bikeable, Transit-connected

- *Summary:* AISD staff is promoting and encouraging sustainable transportation and mobility options. There are opportunities within the AISD Bond funding to improve mobility connectivity at campuses.
- *Mobility and AQ subcommittee:* Identify and help communicate ways to improve sustainable mobility:
 - 1) work with staff to develop tools (scorecard, guidance) for facilities and construction;
 - 2) work with staff, schools, Green Teams to develop a campus/community toolkit (safe routes to school, bike accessibility, etc.)



KEY STRATEGY: IDENTIFY, EVALUATE AND IMPLEMENT COMMUTE OPTIONS

Make Schools More Walkable, Bikeable, Transit-connected

- *Summary:* AISD staff is promoting and encouraging sustainable transportation and mobility options.
- *Mobility and AQ subcommittee:* Identify mobility events and activities for staff, schools and communities. Help staff to prioritize, select, and promote.





MOBILITY AND AIR QUALITY

March ESAC Preview: Mobility Theme



DC1



AUSTIN | Sustainability
Independent School District

SUSTAINABILITY ACTION AREA UPDATES: WASTE & PROCUREMENT

AMANDA MORTL



#AISDGreen
@AustinISDGreen



WASTE AND PROCUREMENT

News:

- Implemented compost at Austin HS, 25 more to go!
 - Students produced video, webpage, advisory lesson, PSAs, and electronic volunteer sign-up
- Image library for schools developing
- Zero Waste Toolkit available
 - Example PSAs
 - Bin request form
 - Sorting slideshows in English & Spanish
 - Sorting signage
- TDS Waste Optimization Report identified schools with
 - >16 cy landfill pick-ups/week (27 ES, 17 MS)
 - >30% population loss since 2013 (7 ES/PS)



Next steps:

- Update Campus Zero Waste Guide, and post it in AISD's Zero Waste Toolkit



DC1



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SUSTAINABILITY ACTION AREA UPDATES: FOOD & NATURE

MISTY OLSSON & ANNE MULLER



#AISDGreen
@AustinISDGreen



NUTRITION & FOOD SERVICES

- Disposable foam tray update – all middle schools have transitioned from foam trays to 9” compostable plates
- Recyclable trays update – delayed until SY 18-19 due to production issues. These trays are made of polypropylene and according to the Texas Disposal Systems website, the trays will need to be rinsed prior to recycling
- Compostable liner inventory will be increasing in preparation for district-wide composting.
- Subcommittee group – adding more farms / farmers to the list for field trip sites



SUSTAINABILITY ACTION AREA UPDATES: COMMUNITY ENGAGEMENT

MONICA LOPEZ MAGEE



GREEN TEAM CONTACTS

Goal: Create an up-to-date list of Green Team Contacts at schools

Purpose: The updated list will be used to share AISD ESAC happenings and resources

Status: over 190 contacts from WPD, BGF, NWF and individual contributions

Next Steps:

- Add contacts to the list:
https://docs.google.com/spreadsheets/d/1R_NdjGnq9GsyT803fXx2GkEWnrx1fTZFgCC8haz5E7I/edit?usp=sharing
- Call schools and 1) confirm GT contact or 2) acquire GT contact for the list
- Email contacts on list by school confirming their interest in serving as the GT contact

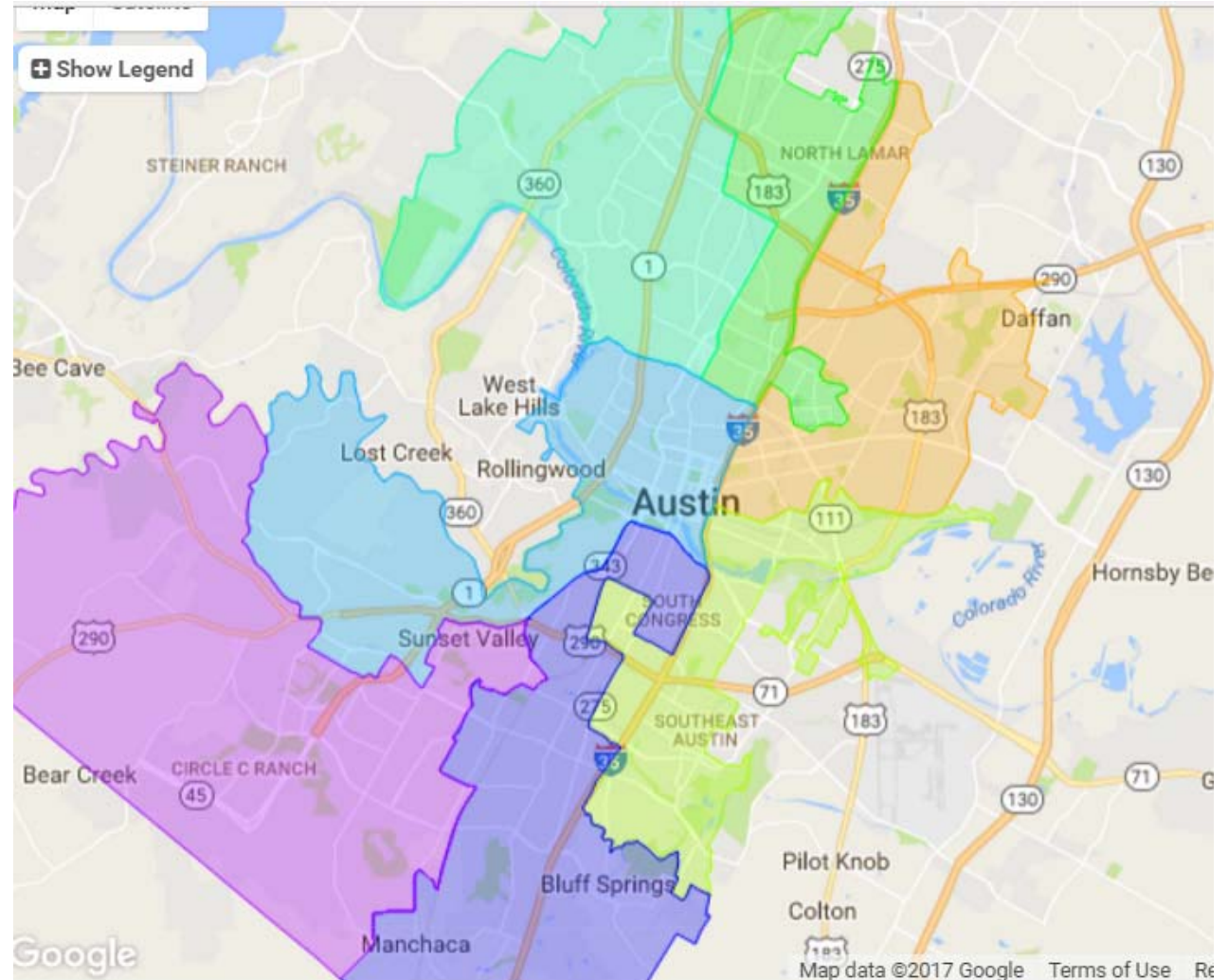


COMMUNITY ENGAGEMENT

Goal: conduct a minimum of 1 outreach event in each AISD district (7).

Method: affinity voting on strategies displayed via posters at events. Posters will be in English and Spanish.

Next Step: Confirm 2 outreach events your committee will attend this spring to help garner input on the sustainability plan.





COMMUNITY ENGAGEMENT

Sample Poster: subject area, overarching goal, and condensed strategies

Activation

- Participants given # stickers to label the strategies that are important to them.
- Post-its also provided for participants to contribute new suggestions.

Sustainability at Austin ISD

Sostenibilidad en el Austin ISD



Mobility & Transportation

Movilidad y transporte

M1. Offer transportation alternatives for **staff and teachers** (public transport, work from home, carpool, etc.) / **M1.** Ofrecer alternativas de transporte para **el personal y los maestros** (transporte público, trabajar desde casa, compartir el vehículo, etc.)

M2. Facilitate transportation solutions for **students** (walk, bike, carpool, etc.) / **M2.** Facilitar soluciones de transporte para los **estudiantes** (caminar, montar bicicleta, compartir el vehículo, etc.)

M3. Use alternative fuel vehicles & electric charging stations / **M3.** Usar vehículos de combustible alternativo y carga eléctrica.



COMMUNITY ENGAGEMENT

Confirm 2 Outreach Events

Event Considerations:

What is already on your calendar

Safe Route to Schools Meetings

CAC Meetings

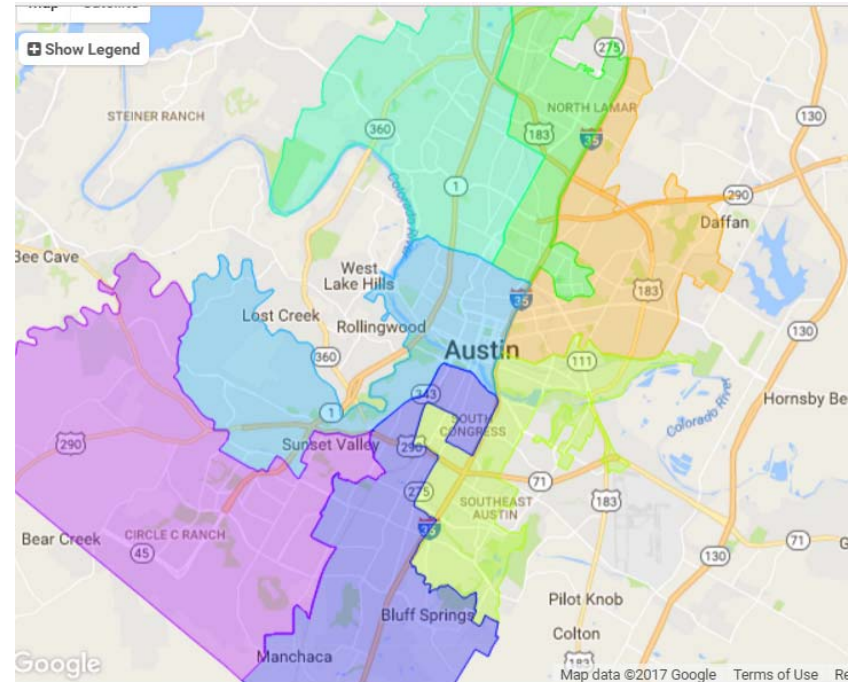
ACPTA 3/29 12-1:30pm

Campus PTA Meetings

HOA/Neighborhood Association Meetings

Teacher Training

Athletic Events





SUBCOMMITTEE TIME!





THANK YOU for all you do to help AISD
be green!



Mark your Calendar! **FY17-18 Meeting Dates:**
5:30-7:30pm, Board Auditorium, Carruth
Administration Center, 1111 W. 6th

September 27, 2017
Food & Nature
November 29, 2017
Waste & Procurement
January 24, 2018
Water & Energy
March 21, 2018
Transportation & Air Quality
May 23, 2018
Elections!



A REPRINT FROM

SCIENTIFIC
AMERICAN

MORE FOOD, LESS ENERGY

Changes in agriculture, policy and personal behaviors can reduce the energy a nation uses to feed itself and the greenhouse gases it emits

By Michael E. Webber



A REPRINT FROM

SCIENTIFIC AMERICAN

Our future rides on
our ability to integrate

ENERGY

+

WATER

+

FOOD



FEBRUARY 2015

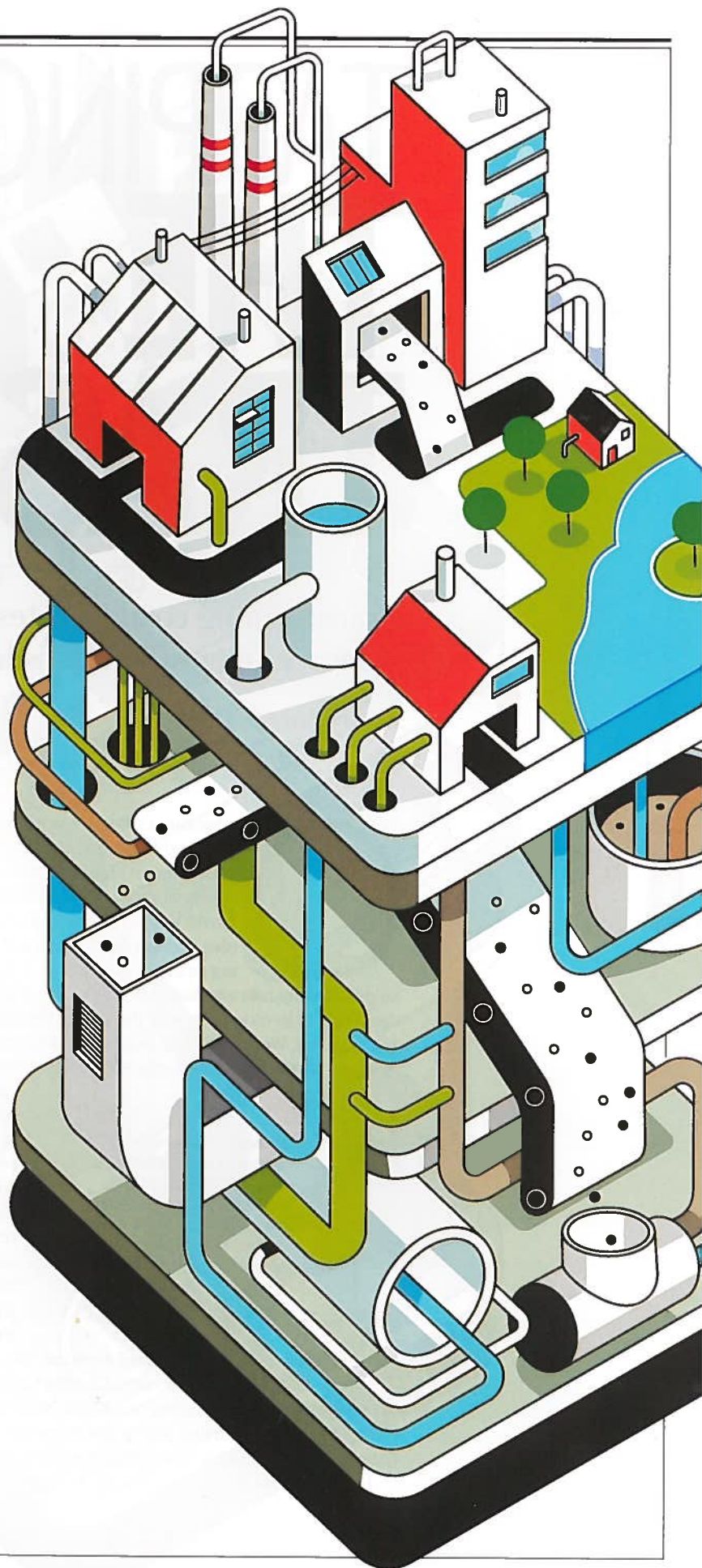
A REPRINT FROM

SCIENTIFIC
AMERICAN

TAPPING THE TRASH

Transforming costly wastes into
valuable resources can make
cities highly efficient

By Michael E. Webber



JULY 2017

is among many students. Many, she says, don't

Sarah and her family plan on staying in Austin

make a house."

Eco Clubs Team Up to Earn Green Flag

BY MIRANDA GERSHONI | Copy Editor

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Spanish teacher Lawrence Sclerandi has sponsored Garden Club for six years, keeping up with the school garden and getting students involved in planting, harvesting, composting, and



Garden Club has been setting up spaces for a monarch garden. Freshman Mary Gracie speaks out in order to plant butterfly-friendly plants. "Garden club is fun because you get to plant all these different types of seeds, see them grow and harvest them," Gracie said. Photo by [unreadable]

other activities in nature.

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"I like the Green Team, it involves more planning [than Garden Club], although you get to engage with the community more, and you actually get to see results and things get done," Huerta said.

Eco-Schools prioritize categories such as waste & consumption, healthy living, schoolyard habits, biodiversity, healthy schools, and sustainable food.

"In order to obtain Green Flag status, we must complete a series of audits into energy and wildlife and other 'green' aspects of our school, to see how we can make our campus more environmentally friendly," Sclerandi said. "Then we must put plans in place to improve our environmental footprint." Students in Garden Club and the Green Team are actively working to meet these goals.

"Right now in Garden Club we are building a monarch garden, so we're moving limestone blocks and we're filling that in with soil. In Green Team, we're actually working towards monarch conservation. So both of them are similar, but they're slightly different in how they approach the problem," Huerta said.

Q&A: EMPOWERING STUDENTS TO DRIVE SUSTAINABILITY DISTRICT-WIDE

Ed Circuit December 18, 2017

In this Q&A, you'll hear a unique and insightful perspective on sustainability and environmental education from **Texas educator Anne Muller**. Anne was a middle school science teacher in the Austin Independent School District for five years and now is in the district-wide role of Outdoor Learning Specialist. This position is part of the Science Curriculum Department and has been in place for six years.

In this role, Anne runs the district's demonstration habitat garden, which is used for district-wide field trips and teacher trainings. She helps integrate outdoor connections into the district curriculum and promotes partnerships with community partners to support teachers and schools. She is passionate about making sustainability a natural part of the education system and the habits that teachers and students develop.



Read on to learn Anne's perspective on the most exciting elements of environmental education, hear about some of the most interesting outdoor initiatives her district has undertaken, and to find out what it means to work with a quality strategic partner like EcoRise. **Q: What are the aspects of environmental education that you are personally most passionate about?**

A: I am extremely passionate about getting kids outside and connected to nature. Many of the students in Austin ISD, not unlike many of their peers nationwide, have a disconnect from nature and spend a large amount of their day using technology. When they get outside for play, their imaginations soar and they can get into deep, meaningful play. It's during this time that they build

strong relationships with each other and build important skills like confidence, teamwork, creativity, and more. When kids get outside for learning, the outdoors becomes an extension of the indoor classroom and adds necessary context to bring lessons to life. Suddenly a lesson on photosynthesis takes on new meaning when you see flowers facing the sun, leaves with green coloring, and can identify the parts of the plant.

Q: When was the first time you felt like your district achieved something really remarkable with sustainability education? Can you tell us about that project?

A: Austin ISD really took a huge leap forward with environmental education when the National Wildlife Federation funded and helped to create the Outdoor Learning Specialist position for the district. This position is dedicated to promoting and supporting environmental education at the campuses and at the district level. We were then able to create a Sustainability Coordinator position for the district, who works on district-level initiatives, as well as supporting environmental education and student projects. By having two dedicated positions, we have a spotlight and a constant voice advocating for and supporting environmental education for our students.



Q: When you were first beginning to work with EcoRise in your district, what kind of support did you receive? In your role, working across schools and grade levels, what does the implementation process look like?

A: When I first started in this position, I found out about EcoRise and their enthusiasm to engage with Austin ISD. I believe they had worked with one high school and were wanting to take on more schools to implement the curriculum and design studio work. They had an inspiring and compelling story with that campus and had done a gorgeous write-up to use as inspiration for other schools.

At first we worked to bring on a few campuses a year, but then the EcoRise capacity really increased. Their trainings became more robust with in-person and online options, the curriculum expanded to include elementary grades, and all curriculum was put online. The

district then made a commitment to help support campuses in their use of EcoRise curriculum and our CTE and

Science departments now pay for campuses to participate in EcoRise depending on what classes the work runs through.

I helped recruit campuses to work with EcoRise and took on a more active role with supporting relationships between them and campuses. They are now such a well-oiled machine and we have so many participating campuses that I merely advertise events, connect teachers to them if they're needing support, and add their trainings into our online registration system so that teachers can get credit for attending. They are now working with 70 campuses in Austin ISD and have earned their reputation for providing great teacher resources and sparking student passions.

Q: What are one or two of the interesting outdoor learning initiatives you've recently led in your district?

A: This year we received a grant, called Girls Outside, through the Texas Parks and Wildlife Department. We partnered with the Westcave Outdoor Discovery Center on the grant, which was an excellent collaboration because Westcave has an outdoor adventure bus we could use on field trips to connect girls with nature. This grant is connecting 250 girls from 10 different campuses to nature through a series of field trips and service projects. This has been really exciting because each field trip has girls from an elementary school paired with girls from a secondary school for a mentoring experience. The grant has been so successful that the teachers are planning their own field trips in addition to those that are written into the grant!

Q: What are some of the ways STEM education is improved when sustainability is a part of the curriculum? How has learning in your district been improved by this integration?

A: I think that STEM education really benefits from a sustainability lens because it gives students something to rally behind and can drive the passion behind their work. When students are working together to solve sustainability problems on their campuses, they are impacting the health of the campus and connecting the community to their projects as well. STEM comes alive when you are working to solve real world problems that impact yourself and your peers.

Q: If you were talking with a peer in another district who has never worked with EcoRise, what's the number one thing you'd want them to know?

A: If you're looking to partner with someone that does everything extremely well from beginning to end with the teachers and students in mind, go with EcoRise. It's well worth the money for all of the materials, trainings, and face-to-face support teachers get. Students are making real differences in their communities, and teachers that work with EcoRise are always happy and thankful for such an amazing resource. EcoRise creates student leaders that advocate for sustainability and plan for solutions to issues on campus and beyond. The curriculum is student-driven and teachers are so strongly supported that students are creating real energy and water savings on their campuses and impacting systems for future classes!

EcoRise's Bright Green Giving Season is happening now through the end of 2017! We are fundraising to help bring our curriculum and professional development to more teachers than ever in 2018! Our teachers help inspire a new generation of leaders to design a green future for all through environmental education and design thinking projects. To learn more about this campaign, about EcoRise's curriculum resources, and how you can support students and teachers, visit <https://ecorise.org/brightgreengiving>

