South Windsor Celebrates 40th Anniversary of Earth Day with Tree Planting

Karl E. Reichle, Tree Warden

In January 2010, South Windsor’s Mayor John Pelkey proposed a concept to the South Windsor’s Tree Warden, Karl Reichle, to plant 40 trees in celebration of the 40th anniversary of Earth Day. Karl expressed concern about doing this in such a tight budget year, “how did the Mayor think we could afford the program?” Mayor Pelkey’s idea was for residents and businesses to pay for a tree to be planted on Town properties such as Parks, Schools and different Public Buildings. We worked out a budget plan for planting, mulching, and installing a plaque commemorating the 40th anniversary of Earth Day and whatever other message the donor wished to include on the plaque. The cost would be $200.00 for anyone wishing to participate in the program.

The South Windsor Town Council supported the program wholeheartedly and Deputy Tree Warden Steve Lavigueur selected and tagged 40 trees at Millane’s Nursery in Cromwell. The program was off and running with an estimate of selling 20-25 trees. Elizabeth Locicero, the first person you meet when you come to the Public Works Town Garage, handled the sales.

Earth Day continued on page 2
of the trees with the residents. Elizabeth surprised the Tree Warden by being quite a saleswoman. The Parks and Grounds crew stepped up to the challenge during their one of the busiest times of the year and planted all of the trees. South Windsor’s Street Services sign shop under the direction of John Caldwell created and engraved the plaques. When the last of the trees where planted and all of the plaques installed, South Windsor’s Tree Warden was very surprised and delighted that all 40 Trees had been bought by Residents and Businesses of South Windsor.

South Windsor’s Mayor John Pelkey deserves kudos for such a great idea. All the men and women of Public Works deserve a big thank you for all their work. Most of all a great big Thank You goes out to the Residents and Businesses of South Windsor for supporting the program. South Windsor is a very lucky community to have all these great people come together to take the concept of the Mayor and make it a reality. All of the trees where paid for without taxpayer dollars and the residents will enjoy their beauty for years to come.

Earth Day continued

2009 Hot Mix Asphalt Paving Awards

At the 52nd Annual Paving Conference hosted on April 5, 2010 by the CAAPA (Connecticut Asphalt & Aggregate Producers’ Association), the CCIA (Connecticut Construction Industries Association) and the Connecticut Department of Transportation, the following awards were presented:

To recognize a quality HMA Pavement placed on a municipal roadway, the following team exemplified the highest standards of paving excellence.

Location: Brook Street, New Britain
Prime Contractor: Tilcon Connecticut, Inc.
Paving Contractor: Tilcon Connecticut, Inc.
Milling Contractor: Garrity Asphalt Reclaiming, Inc.
Inspection Agency: City of New Britain

To recognize a quality HMA Pavement placed on a limited access roadway, the following team exemplified the highest standards of paving excellence.

Location: Route 7- Danbury & Brookfield
Prime Contractor: Tilcon Connecticut, Inc.
Paving Contractor: Tilcon Connecticut, Inc.
Milling Contractor: Black & Boucher
Inspection Agency: ConnDOT – District IV Maintenance

To recognize a quality HMA Pavement placed on an unlimited access roadway, the following team exemplified the highest standards of paving excellence.

Location: Route 140 – Ellington
Prime Contractor: All States Asphalt, Inc.
Paving Contractor: CT Paving, LLC
Milling Contractor: Costello Industries, Inc.
Inspection Agency: ConnDOT – District 1, Maintenance
The Connecticut Public Works Academy
Class of 2010

Leo Adams
T.J. Arcari
Brian Attardo
Joseph Aubin
Douglas Bates
Adam Boyle
George Casale
Charles Corner
Antonio Dinis
Mario Diorno
Ruben Gonzalez, Jr.
Dean Grasley
Timothy Hebert
Donald Hill
Bill Hirleman
William Jasmin
Chris Jesudowich
Leroy Jones
Mike Merritt
Frederick Morton
Brian Onze
Kenneth Ouellette
Dan Ouellette
Fred Rich
Wes Roman
Frank Summers
Aaron Thayer
Armindo Videira
Chuck Zingle

Town of Thompson
Town of Burlington
Town of East Lyme
Town of Westport
Town of Manchester
Town of Colebrook
Town of Colchester
Town of Westport
Town of Watertown
Town of Westport
City of Bridgeport
Town of New Milford
Town of Woodstock Highway Department
Town of North Stonington
Town of Watertown
Town of Colebrook
Town of Farmington
City of Bridgeport
Town of New Milford
Town of Granby
Town of Westport
Town of Burlington
Town of Cromwell
Town of Woodstock Highway Department
Town of East Lyme
Town of East Lyme
Town of New Milford
City of Bridgeport
Town of Colchester

Above: Ken Palmer of ArborMaster Training in Willington provides instruction to the class, assisted by members of the UConn Facilities department.

Left: Members of the Connecticut Public Works Academy learn how to safely operate a chainsaw while felling a tree.

Summer 2010 APWA Chapter Update

The New England Chapter of APWA is looking for volunteers to help out with the 2010 International Exposition and Conference to be held at the Boston Convention Center from August 15-18. Volunteers are needed to be room monitors, work information booths and other tasks. If volunteers work a half day they get a pass to attend the show the other half of the day. We need over 400 volunteers to make this the best show in public works. You can sign up for any time you are available at: www.apwa.net/meetings/congress/volunteer.asp.

We are also looking for folks that have more intimate knowledge of Boston to man hotel information booths on the Saturday and Sunday at the beginning of Congress. If you are willing to help with that you can sign up at the link above and send me a quick email at cquiram@goffstownnh.gov. I will make sure I assign you to the info booth. Thank you and see you in Boston.
In April 2007, a 40-foot hybrid hydrogen fuel cell bus debuted in downtown Hartford, Connecticut. This zero-emission, high visibility ambassador for State-owned operator Connecticut Transit (CTTRANSIT) is a demonstration project bringing together many technology partners that paves the way toward additional clean fuel public transportation vehicles.

CTTRANSIT had been waiting for hydrogen fuel cell technology to become viable for transit. As the recent National Renewable Energy Lab report notes, “The fuel cell bus is considered prototype technology in the process of being commercialized.” That new paradigm became a reality in 2006 when UTC Power (the same company that has provided fuel cells for the NASA space craft that went to the moon as well as the Space Shuttle and the Space Station), headquartered in South Windsor, Connecticut, partnered with VanHool bus in Belgium and ISE Corporation in California to design a hybrid hydrogen fuel cell bus. Initially four vehicles were built for AC Transit and Sun Line in California. In Connecticut, The Greater Hartford Transit District was awarded a Federal grant to purchase a fifth fuel cell bus.

This month, three years after introducing the cutting-edge technology to the roads and highways of Connecticut, we will continue test and evaluation by adding four new next generation hybrid hydrogen fuel cell buses to the fleet, making CTTRANSIT among the world leaders in running a hydrogen fuel cell powered transit fleet. The new buses will be lighter weight for improved fuel economy and a higher speed. They will also utilize Lithium Ion batteries that are small and light, can store more energy, and have a much longer service life. The bus will have the latest generation fuel cell, which also should have an extended life.

So how does this special bus work? It is an all-electric vehicle. Electricity produced by the fuel cell runs two electric motors through a combining gearbox. Because the electric motors are infinitely variable, no transmission is needed. When additional power is required for acceleration or climbing grades, extra electricity is provided by the on-board batteries.
When the power requirements are low, the fuel cell recharges the batteries. The bus also has regenerative braking that captures the energy typically expended during braking. The electric motors instantly and transparently turn into generators when braking is applied, which also recharges the batteries. All this results in a very efficient drive train. The hydrogen fuel cell bus gets close to twice the fuel economy of a similar size standard transit diesel bus. It has enough fuel onboard to run continuously for an eighteen hour operating day.

Hydrogen is the most abundant element in the Universe. It is a resource that we will not have to import or run out of. When used to power a fuel cell there are no harmful emissions—just a small amount of warm water. The water is clean and pure. In fact, this is the water generated for the astronauts to drink when working in space.

There are different kinds of fuel cells. Our bus is equipped with a Proton Exchange Membrane (PEM) design. This configuration provides for a quick start up and operation at ambient temperature and pressure.

The fuel cell power plant generates clean electricity by a fairly simple process. Hydrogen fuel is channeled through field flow plates to an anode on one side of the fuel cell while oxygen in the air is channeled to a cathode on the other side of the unit. At the anode a platinum catalyst causes the hydrogen to split into positive hydrogen ions (protons) and negatively charged electrons. A polymer electrolyte membrane only allows the positively charged protons to pass through it to the cathode. The negatively charged electrons must travel along an external circuit to the cathode. Flowing electrons—is electricity—that can be used to run electric motors to drive a bus or to power auxiliary systems such as air conditioning or power steering. At the cathode, the electrons and hydrogen protons (H2) combine with oxygen (O) to form warm water (H2O).

When CTTRANSIT got our first hydrogen bus we had two major issues to resolve. Where would we get the hydrogen to refuel the bus each day and how would we service and store a lighter-than-air-fuel vehicle in an all-diesel bus garage? As luck would have it, UTC Power, the manufacturer of the fuel cell, is only seven miles away from the CTTRANSIT Hartford Division garage. They already had a hydrogen fueling station on site and upgraded their equipment with a fast fill compressor and a vehicle dispenser. Our refueling problem was resolved.

The hydrogen supplied to the station is a byproduct of brine production from Niagara Falls hydropower. The hydrogen collected there is transported via pipeline to another plant where it is purified, compressed and liquefied and finally trucked the relatively short distance to UTC Power. It is a very clean and efficient way to produce hydrogen. Before our program other bus companies that had tested hydrogen-fueled buses had spent millions of dollars to build small separate garages or bays for these specially fueled vehicles. They were very expensive because they were made blast proof. The concept was to contain an explosion should one ever occur.

We felt this was the wrong strategy. We hired a very good consultant who had extensive experience working with hydrogen and who had sophisticated hydrogen computer modeling tools. Hydrogen is the lightest element in the Universe and if released it wants to disperse as quickly as possible. Hydrogen is only flammable or explosive if concentrated. We were able to prove to the State Facility Engineer and Fire Marshals that a better way to handle a hydrogen leak was not to contain it, and make it more concentrated, but to disperse it immediately.

The approved final solution was groundbreaking and inexpensive. We placed hydrogen leak detectors in the bus and the bus bay, and connected them to the facility backup electrical power supply should grid power fail. We lock out/tag out the hydrogen fuel system in the bus before bringing it into the garage and run it solely on electric power. Plastic covers were placed over the light fixtures in the bus bay to prevent hydrogen from getting into them and eliminating them as a possible spark source. Ventilation ducts were lowered from the ceiling area so that a low flow of...
constant air would be directed on the bus at all times.

A red and green traffic light was installed at the bus bay. If the green light is showing, all systems are working properly and it is safe to bring the bus inside. If the red light is on something is not working right and so the bus may not be brought inside. The total cost of these changes to allow a hydrogen-fueled bus into an all diesel garage was only $75,000.00.

Our experience with a hydrogen fuel cell bus evaluation program has been extremely successful so far. In surveys of both our customers and Drivers about the special vehicle, they report liking how quiet and smooth the bus is and especially appreciate how clean the technology is while using an abundant renewable resource for fuel. We have proven that hydrogen can be safely handled at relatively low cost in a transit fleet environment. We have had zero safety issues in the three years we have been running the program.

Now, with our expanding hydrogen fuel cell bus fleet we need additional bus storage space. This month construction of a simple butler building began at our Hartford garage site, which will store six hydrogen-fueled buses. The garage will utilize the same inexpensive hydrogen handling processes that CTTRANSIT pioneered with our first bus.

In another couple of months we will begin the installation of our own on site hydrogen fueling system. It will produce 30 kg of hydrogen each day from water using an electrolysis process partially powered by an existing solar array located on our bus garage.

The United States Department of Energy National Renewable Energy Laboratory (NREL) has also been a project partner. Their report summarizes project accomplishments, stating “Significant achievements have been made during this evaluation, including safe operation and fueling, maintenance facility modifications at a modest/low cost, … and increasing public awareness of the bus and the demonstration project.” The NREL have been documenting the results of our test program over the past three years and will continue to do so for the foreseeable future. You can download their latest report on the program at www.nrel.gov/hydrogen/pdfs/47334-1.pdf

If you would like to see the bus and take a test ride yourself, we have made it easy for you to do so. The bus runs on the downtown Hartford free Star Shuttle loop service Monday through Saturday. So take a ride on the bus of the future, here today, right here in Connecticut.
Mary McCarthy Wins Award of Excellence from the Connecticut Training and Development Network

Mary was a 2010 recipient of the CTDN Award of Excellence Innovative Approaches Award. This award is given for a creative high-quality training program that advances the state of the art in staff and/or organizational development fields in a Connecticut State Agency. The award was presented at the CTDN Annual Conference on June 4, 2010 at the St. Clements Castle in Portland, CT.

Congratulations Mary, well deserved!

Public Works Week Celebration

New Canaan Holds Public Works Week Barbecue to Say Thanks During National Public Works Week

First Selectman Jeb Walker thanks the crew for their hard work and dedication.

From left: Ted Yarrow, Dan Bochicchio, Cheryl Jones, Duke Court, Mike Evanchik, Carol McDonald, Neil Coppola, John Howe, and Dennis Barron enjoy the day.

First Selectman Jeb Walker thanks the crew for their hard work and dedication.

Left to right: Ted Yarrow and Pete Meduri cook for the crew.

Left to right: Shelly Desjardins and Mary McCarthy-CTI

Left to right: Leigh Julian, CTDN, Mary McCarthy, T2 Center and Karen Caliendo, CTDN

Left to right: Susan Baillageon-ConnDOT, Mary McCarthy, Stephanie Merrill-CTI

Left to right: Leigh Julian, CTDN, Mary McCarthy, T2 Center and Karen Caliendo, CTDN
Technology Transfer Center Request Form

_____ Please change my address/contact information as indicated below.
_____ Please add this person to the mailing list.  _____ Please remove this person

Name: ______________________________________________________________
Title: _______________________________________________________________
Agency/Organization:  ________________________________________________
Address: ___________________________________________________________________
City/State/Zip:  _______________________________________________________
Phone: _________________  Fax: _________________  E-Mail:  ________________

I would like to see a future newsletter article on the topic of: _____________________

I would like to suggest the following future training topics be offered by the T2 Center:
____________________________________________________________________
____________________________________________________________________

I would like to request the following informational resource materials:
____________________________________________________________________
____________________________________________________________________

Please fax a copy of this form to (860) 486-2399 or mail to:

University of Connecticut
Technology Transfer Center
270 Middle Turnpike, Unit 5202
Storrs, CT  06269-5202