

# 2015-2016 School Nominee Presentation Form

## ELIGIBILITY CERTIFICATIONS

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### School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes grades Pre-K-12.
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

### U.S. Department of Education Green Ribbon Schools 2015-2016

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Public  Charter  Title I  Magnet  Private  Independent  Rural

Name of Principal: Mrs. Jill Wnuk

Official School Name: Two Rivers Magnet Middle School

Official School Name Mailing Address: 337 East River Drive, East Hartford, CT 06108

County: Hartford State School Code Number \*: **2415014**

Telephone: 860-290-5320 Fax: 860-509-3609

Web site/URL: www.tworivers.crec.org

E-mail: jwnuk@crec.org

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.



Date: 1/19/16

(Principal's Signature)

Name of Superintendent: Ms. Dina Crowl

District Name: Capitol Region Education Council

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.



Date: 1/19/16

(Superintendent's Signature)

#### **Nominating Authority's Certifications**

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Connecticut State Department of Education

Name of Nominating Authority: Dr. Dianna R. Wentzell

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.



Date: 1/20/16

(Nominating Authority's Signature)

## SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Two Rivers Magnet Middle School, (TRMS) from the Capitol Region Education Council District, is located in East Hartford, CT. The school serves 652 students in grades 6-8, from 21 towns. 40 % of the school population qualifies for free or reduced lunch, and 54% are minority students.

TRMS was honored as a "Magnet School of Excellence" by Magnet Schools of America. The school is aptly named for the convergence of the Hockanum and Connecticut Rivers in East Hartford, Connecticut. The location of the school gives our students access to a true living laboratory where they can study under the theme of Environmental Science. Between the rivers and the schools pond, students learn about biodiversity of the land and learn to become true stewards of our nature. Two Rivers couples environmentalism with an emphasis on STEM teachings.



**Figure 1 Two Rivers science teacher Ed Smith with students**

An environmentally themed STEM school, TRMS focuses on environmental awareness through courses like sustainability, environmental ethics, and a field science class. Our focus on the environment extends beyond the classroom as well. Our recycling program is run through our students, who collect recyclables from classrooms and collect data on how classes are doing in terms of accuracy. Our school widely supports recycling; we fill 15-20 ninety gallon barrels of single stream recycling per week. After a small scale compost operation last year, we have introduced a schoolwide composting program to Two Rivers. Our kitchen staff collects any waste produced in the kitchen, and our sixth graders are piloting a student compost program, in which students collect food scraps during lunch for compost. On average, we collect three 90-gallon barrels of food scraps weekly.

Our students play an integral role in their own learning and environmental stewardship at Two Rivers. In 2009 several students and our enrichment coordinator began the Project Learning Tree modules. Through their work with Project Learning Tree, these students wrote articles that were published in the Hartford Courant as well as presenting at both the Connecticut Science Teacher Association and National Science Teacher Association conferences in Hartford in the fall of 2011. In 2012, Two Rivers was named the first PLT Green School in Connecticut, and our enrichment coordinator received the first PLT CT Educator of the year award in 2012. The students worked with our facilities director, the town of East Hartford, and the Board of Education to research, approve, and install a

windspire on the roof of our building, with funds received through a PLT grant and CREC. The windspire is connected to a computer in the classroom directly below it so students can collect data on how much energy is generated each day.



**Figure 2 Student hanging a homemade bird feeder made from a recycled water bottle for the eBird - Feeder Watch program**

In addition to collecting data on our waste reduction, we also collect data on the environment around our school. Students participate in Picture Post, a program out of the University of New Hampshire and part of the Digital Earth Network, taking panoramic pictures of the school grounds and uploading to compare over time. We also have a weather bug station on the roof of our building, so students can compare the picture post photos with the weather reported on those days to look for patterns. Additionally, students are familiarizing themselves with Cornell University's School of Ornithology program, eBird. Groups of students monitor bird feeders in three different locations around the property, collecting data on the amount of seed left in each feeder as well as the number and types of birds sighted at each feeder. All of these programs provide rich data that is both engaging and informative for our students.

As a school, we are charged with educating the whole child, which includes promoting health and wellness in our students. We follow all nutritional guidelines of the National lunch standards, and many of our students receive both breakfast and lunch at little to no cost. We have a fruit exchange bin for students who choose not to eat their fruit. They can leave it in a bin just past the cash register and other students who are hungry may take the fruit. This not only supports our health and wellness goals but our focus on waste reduction as well. Students in high risk groups are also offered a backpack of food to take home on Fridays to help their families stretch their food over the weekend. Through donations from Whole Foods, students have nutritious food available to them when they might otherwise go without.

Our students take physical education twice a week, during which time they participate in circuit training with heart rate monitors that can be downloaded to a website and track student data. We offer clubs for walking, flag football and bowling, as well as intermural soccer, cross country, volleyball, basketball, track, softball and baseball. Teachers frequently take students outdoors as part of class or for earned rewards, and students can also earn lunch outside through our positive behavior support system.

## **PART IV – DOCUMENTATION OF SCHOOL’S ACHIEVEMENT IN THE 7 STEPS**

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### **Step 1: Green and Healthy Outlook**

Two Rivers Magnet Middle School has been a Connecticut Green LEAF School since 2013. Since then, our focus on environmental studies has grown and our teachers have sought out opportunities to learn more, including three of our teachers taking part in a year and a half long grant. The information received at these workshops has been invaluable in terms of helping us improve in the areas of health and wellness, environmental literacy, and sustainable practices. Our participation in the CT Green LEAF program has provided a network of educators who share information with each other and offer assistance in our efforts to become a greener school. Our teachers who have participated in these learning programs have shared information with our staff, at statewide conferences, and with participants at the 2014 and 2015 Green Schools National Conferences.

Two Rivers’ health and wellness component of the Green LEAF initiative centers around our Green Team, which is comprised of teachers, administrators, students, the school nurse, custodial staff, and food service staff. Additionally, administrators, the school nurse, and our head custodian were trained in the Tools for Schools IAQ tools for schools program, and have conducted walk-throughs of the building to monitor the IAQ standards. Our custodians worked with us to develop and improve our school recycling program, and the kitchen staff has been invaluable in helping us establish our student-led composting program.

Greener resource management is embedded in the Two Rivers Middle School culture. Our students have completed all modules of Project Learning Tree GreenSchools! curriculum. Through their investigations on energy usage, recycling and composting, students initiated programs in recycling and composting that have now grown to be schoolwide and worked with the district and town to install a wind spire on our roof and solar panels on the side of our building. Student work resulted in our school being the first CT recipient of the PLT Green School Award in 2012. Inspired by their participation in Project Learning Tree, students in the “Green Rivers” club went on to take part in several wonderful activities.

In the Fall of 2011, our 8th grade ambassadors presented at both the Connecticut Science Teachers Association and at the National Science Teachers Association’s conference in Hartford. The ambassadors also wrote, directed and acted in a PSA on the invasive emerald ash borer beetle and the Asian Long-horned beetle which is posted on You Tube, the CT DEEP, and on our school web site.

Members from all three grade levels regularly had an outreach team of students who presented to various grade levels in the local elementary schools. Their lessons focused primarily on recycling, reusing and composting. They were involved with the planning and running of stations at our Earth Day for many years and also presented at the Glastonbury Earth Day.

The club brought the live wolf and conservation presentation to our school and the ACE Climate Change presentation for 4 years for every 6th grader-- running a "Wear Jeans-- Go Green" day to sponsor these events.

As a result of their work with PLT, the Green Rivers students also received a \$6000 grant towards funding an alternative energy source at our school. The students involved in this project

researched alternative energy sources and decided to pursue wind energy. Over the next three years, students worked with Green Rivers advisor, Christie Hazen, to research, collect data, present findings, and write a grant to install a windspire on the roof of the building. In 2010, students began researching energy consumption at Two Rivers. With the help of CREC Facilities, they were able to determine that the average monthly energy usage amounted to \$20,000. Through student research, meetings with facilities, and hearings with the town and Board of Education, the students received approval and grant funding through Project Learning Tree to install a windspire on our roof. In winds that average eleven miles per hour, the windspire will generate approximately 2000 kWh per year. This amount increases on days where winds are higher. Based on current supplier rates of about \$0.09 per kWh, the windspire offers a small savings of \$187.42 per year. While the cost savings isn't huge, Two Rivers has reduced its greenhouse emissions to offset nonrenewable energy consumption. The learning that happened surrounding the project, with students investigating the importance of renewable energy and understanding the permitting and installation process, is priceless.



**Figure 3 The windspire installation at Two Rivers Middle School**

Students checked the wind speed around the school with anemometers and met the CREC building manager, maintenance staff and our principals at monthly lunch meetings at our school. The students were involved in the different company reps coming in to present their wind power products. Students performed weekly monitoring of light usage (foot-candles) and temperature in the school.

The students investigated the best wind power devices and found a dozen windspires were being used at Connecticut's Quinnipiac University. Once they decided on wind power, the students helped write a grant to PLT for the windspire and also provided input as to where to place the windspire based on research they had done. Once it was installed, the students helped monitor the amount of energy it saved through the software program that is connected to the windspire.

Environmental and sustainability literacy are important at Two Rivers. We strive to incorporate the NAAEE guidelines for excellence throughout the curriculum. This is most evident in our elective classes, which all students take. Students are presented with environmental topics such as: threats to biodiversity; habitat loss; climate change; and water pollution. Through hands-on investigations and research, students are challenged to look at multiple sides of an issue, and then develop their own conclusions, supported by their investigations and research data. Students learn strategies to evaluate websites for their credibility and accuracy, to make scientific evidence-based claims.

In addition to our Green Rivers Club's recognition, we have individual students who have been recognized for their outstanding contributions to science as well. In May, 2013, two of our students received the Environmental Forum Awards at the State Invention Convention. One of those students went on to publish a Fresh Talk article in the Hartford Courant entitled "Climate Change" in February, 2014.

Two Rivers staff's excellence in environmental education extends beyond our doors, as evidenced by the recognition received by several of our staff. Christie Hazen, our enrichment coordinator and school environmental club, "Green Rivers," leader, won PLT's 2011 CT Educator of the Year award. Our exploratory science teacher, Ed Smith, was the 2013 Honorable Mention for the Presidential Innovation Award for Environmental Educators and 2013 Connecticut Outdoor Environmental Educator Association's Outstanding Educator of the Year. Kennan Poulakos, Two Rivers theme coach, received the 2014 CT Outdoor and Environmental Education Association's Excellence in Environmental Stewardship Award. Each recognition was based on the many unique outdoor activities and experiences that these staff afforded our mostly urban students.

Our commitment to environmental education carries over into our community partnerships as well, for example with the Hartford Marathon Foundation. Our students have calculated the carbon footprint for the marathon event. We also help this event recycle, using old signage for posters and theater set design at our school, and leftover event t-shirts to create reusable tote bags with our students.



**Figure 4 Banners hung in the Two Rivers Middle School foyer celebrating the continued education of alumni.**

Other partnerships include the Connecticut Science Center, where our students have trialed new exhibits and provided "real kid" feedback, and work with the students at the University of Connecticut's engineering department. Our seventh graders participate in the Invention Convention, sending 17 inventions in 2015 and sharing their work at the school's STEM Night. In June of 2016 we are preparing to host the state's Bio-Blitz, with students participating in cataloging our school's habitat. We hosted the BioBlitz ten years ago and are excited to compare the data between the two events.

Two Rivers incorporates CT's Environmental Literacy Plan in our program, including:

## Learning Opportunities for All

- **Include meaningful outdoor learning experiences at all grade levels...**

Two Rivers offers many opportunities for outdoor education at all grade levels. Students in grade 6 participate in Project Oceanology, a unique shipboard science investigation which allows students to collect data on an “envirolab” research vessel, including collecting and testing water samples, turbidity, and pH. These water quality testing skills continue throughout their three years at Two Rivers as they collect and test water samples from the pond in front of our school, as well as the Hockanum and Connecticut Rivers, our “Two Rivers” that run behind the school, as part of our freshwater ecology and exploratory science curriculum. Throughout their three years, students make multiple trips outdoors, learning about the edible plants on campus, collecting organisms from the pond and two rivers, and investigating invasive species around campus.

- **Support citizen science programs, environmental clubs, and after-school programs...**



**Figure 5 Student measuring the amount of birdseed in a bird feeder.**

Two Rivers participates in several citizen science programs, both locally and globally. At the local level, Professor Morrison of Trinity College takes our students bird banding twice a year on campus, both to identify banded birds and band new birds. The high interest in the bird banding activity led to a natural fit to include Cornell University School of Ornithology’s “Ebird” program to our curriculum. As part of a “scientific inquiry” class, students set up three feeders in different locations: in a tree located in the bus loading area; a tree right next to the pond; and a tree in a field next to the school where many of our bird banding activities took place. In addition to providing more opportunities to spot birds, students are measuring the amount of seed left in each feeder several times a week and entering it into a spreadsheet as part of their investigation on what impact location has on the amount of birds using the feeders. While spotting different birds at each feeder one class, a student came up with the idea to investigate further. Now, in addition to uploading the total birds sighted on any given day

to Ebird, students are keeping track of what types and how many birds they see at each feeder to determine if the location seems to attract different types of birds.

As an extension to the Ebird work, students are researching the birds that they see at the feeders and taking photos when possible. The final project for the class is to create a field guide of birds

seen around our campus. Similarly, students in our 8th grade hydroponics class use the “LeafSnap” app to identify plants located around campus, and are also creating a field guide.

As part of their study of Mexican culture at the start of the school year, Spanish students learn about the migration of Monarch butterflies from Canada to Mexico, and their significance to the Mexican culture. They also learn about the threats to Monarchs due to decreasing milkweed populations. As part of this unit, we raise Monarch butterflies from caterpillars and submit the data to [Monarchwatch.org](http://Monarchwatch.org) upon their release. We have a hobby greenhouse in our media center



**Figure 6 Student preparing to release a Monarch as part of our Spanish curriculum, which incorporates threats to the Monarchs in their discussion of the Monarch’s annual migration from Canada to Mexico.**

where we house the caterpillars. Currently we are working on establishing milkweed plants and butterfly bushes in the greenhouse so that we may raise and release Monarchs each spring as well.

Two Rivers also recently joined PicturePost, a program through the University of New Hampshire that collects images of areas around the world and monitors changes over time. Our students helped with both determining the location and the installation of our picture post near the pond. Students take the picture sets and upload them to our site. There is an informational sign at the post instructing and encouraging others to upload pictures as well, and the information is also on our school website to encourage our community to take part in the project.

We have a Weather Bug station on the roof of our building, and the link to that data is available to all students and staff. Analyzing data from station in combination with the collection of campus pictures supports a rich unit on climate and weather for our sixth grade science classes. Students can look at the type and amount of clouds on any given day on campus and compare those photos to the data on Weather Bug for those days to help clarify their understanding of types of clouds and their relationship to precipitation.

- **Encourage students and teachers to engage in research of environmental issues and programs.**

Students at Two Rivers engage in a number of courses that promote research of environmental issues. Our sixth graders research threats to both freshwater and oceans in our oceanology and freshwater ecology classes. Seventh graders research the ethics aspects of environmental issues such as habitat loss, climate change, and distribution of resources in our environmental ethics class, and learn about green solutions and alternatives in our sustainability course. All eighth graders participate in an environmental research course, in which they choose to focus on one of the topics they have learned

about over their time at Two Rivers. They conduct in-depth research on that topic. Students at all grade levels have the opportunity to attend a multi-day field studies trip to Cape Cod, in which they investigate a topic of their own design.

## Step 2: Environmental and Sustainability Literacy

Two Rivers offers courses in environmental studies, including: oceanology, freshwater ecology, sustainability, environmental ethics, hydroponics, and environmental research. Most of the coursework in these classes is based on student-designed research projects. While still in its developing stages, our staff are working towards incorporating environmental literacy into core classes as well, as prioritized in our school improvement plan.

Some examples of how we have integrated environmental concepts across the curriculum and within state standards include: Incorporating raising and releasing Monarch butterflies in September as part of the Spanish curriculum to tie into the monarch's migration to Mexico; in language arts, to read non-fiction texts about Monarchs; and in science, to discuss biodiversity and threats to the monarch populations in the unit on populations and ecosystems. We also incorporated a science "groundwater contamination mystery" investigation into a language arts unit on "elements of a mystery". Math has used temperature ranges around the globe to apply integers on a number line, while using the latitude and longitude as ordered pairs to plot on a coordinate plane, and has also used data from the Hartford Marathon to calculate the event's carbon footprint.



**Figure 7 Student showing the plants and cucumber she grew hydroponically**

Our outdoor classrooms include the pond in front of our school, the two rivers behind our school, and the woods around our school. These outdoor spaces have provided opportunities for learning about biodiversity, water quality, bird and plant identification, and weather monitoring. Students' environmental literacy is assessed through their projects and student-based research. Projects include creating a field guide to common birds and plants found around our school; student-designed research questions carried out on a 3 day camping trip to Cape Cod for students and families, and informational posters and lessons which students teach to local schools and at community events to raise awareness on issues such as recycling and composting.

Two Rivers has a theme coach to facilitate staff awareness and participation in environmental literacy activities. She works with teachers to develop environmentally themed activities and units, and also leads the recycling and composting programs. Staff have participated in the Green LEAF workshops, attended two Green Schools National Conferences, taken online courses in citizen science, and attended numerous workshops on field opportunities for students on Long Island Sound as well as through Mystic

Aquarium's JASON project. Our staff have grown to be mentors to others, presenting our work with Monarchs at the Connecticut Science Teacher's Association annual conference, and hosted a 2 day workshop for teachers by the Monarch Teacher Network at our school.

### Step 3: Healthy School Environment

We are in a relatively young building, built in 2002. Its design provides many opportunities for student to measure energy use as the glass walls and high ceilings throughout our three-story building create inconsistent temperatures



**Figure 8 A variety of seating styles offered in a Creative Writing classroom, including couches, standing desks, and ball chairs.**

throughout the building.

As part of our Project Learning Tree units,

students assessed temperature readings in classrooms throughout the building and reported their findings to the maintenance department. We have a school safety committee that has been trained in the IAQ Tools for Schools program, and has done walk-throughs to monitor the building for proper ventilation. Students will also be participating in the spring walk-throughs, and working to connect the school site with the science behind clean green schools. We do not permit students to have any aerosol deodorants or perfumes to reduce asthma triggers, and science teachers use fume hoods for any activity that might produce smoke or other allergens.

In accordance with CREC's Integrated Pest Management policy, no pesticides, herbicides, or fertilizers are used in the maintenance of our school site. Per CREC's Green Cleaning polices we use only environmentally friendly cleaning products.

Two Rivers adheres to the no idling law for vehicles and if we see cars or buses with their motors on we ask that they turn them off. Two Rivers complies with all CT environmental laws with regards to Integrated Pest Management and use of only green cleaning supplies. With regards to environmental hazards, we have a dedicated Chemical Hygiene Safety Officer who regularly attends meetings on latest safety precautions for schools. She maintains MDS safety sheets for all chemicals, and chemicals are all properly stored in a locked room, for which she has the only key.

Students learn about air pollution and issues of air quality in our sustainability class. In developing solutions to air quality issues, students have decided to grow plants to distribute to classrooms as natural air purifiers for the rooms. Students also learn about air quality in seventh grade science, especially as it relates to respiratory illnesses.

For the past five years, Two Rivers has worked with local food agencies to provide additional

support to families in need. The first five years we worked with the East Hartford Food Share. Two years ago, WholeFoods in Glastonbury took over as our food provider. Our program has over 30 families who receive backpacks of donated food each Friday. WholeFoods has also come to school to provide healthy eating workshops. We have a teacher who runs a healthy cooking club and is now adding gardening to the program. Students will grow the herbs that they cook with and learning proper food handling and preparation techniques.

Two Rivers helps its families as well through community health fairs. Professionals from the medical, natural health, social and youth services fields share their programs with Two Rivers families, students and staff.

#### **Step 4: Healthy Nutrition**

Two Rivers follows all national food guidelines for schools. We offer breakfast and lunch, both of which require students to take a fruit or a juice with their meals. Salads are available at each meal, and students with special dietary needs are accommodated by our kitchen staff. We have a greenhouse and a hydroponic garden in which we have begun to grow herbs and lettuce. Our afterschool cooking class uses the school grown herbs as ingredients in their cooking and learns about healthy eating and cooking techniques.

Additionally, several teachers have container gardens in their classrooms, and one class made a homemade ranch dressing using the herbs they grew. Students who don't typically eat vegetables were intrigued enough by the "dressing challenge", in which students conducted a taste test, comparing their homemade ranch dressing with store bought, to eat carrots, tomatoes and celery. The overwhelming class conclusion was that homemade was better. In the spring of 2016 students will grow vegetables that we can send home with students in need and/ or serve during lunch in addition to the school. Weekly plant growth between traditional soil methods in our greenhouse vs. hydroponic growth will offer more opportunities for data analysis and further investigations.

#### **Step 5: Physical Well-Being**

Two Rivers strives to provide outdoor opportunities and physical education for all its students. We have an extensive physical education program, which not only focuses on physical fitness, but collaboration and teamwork as well. Students participate in seventy minutes of PE twice a week, and several classroom teachers take students outside for walks and field studies in addition to the regular PE classes. We offer a walking club after school, as well as an extensive athletic program, in which many of our students participate. For the past two years, Two Rivers students have attended the Hartford Marathon Foundation's "Fit Kids Challenge", in which over 90% of our students walked or ran a mile at UCONN's Rentschler Field to promote health and wellness. .

As part of our fitness program, students run the mile and take part in circuit training. Students wear heart rate monitors, all of which are displayed on a projection screen. As they move through the program they monitor their heart rates, elevating or lowering as needed to achieve the cardiovascular or fat burning goal they are working on at the time. Staff at Two Rivers recognizes the need for students to exercise and the limited time they are formally given through the physical education program, so opportunities to earn reward time outside at lunch and on team throughout the year are supported.



**Figure 9 Two Rivers Middle School Dragon Boating Field Day on the Connecticut River, June 2014 (Hartford Courant photo)**

### **Step 6: Energy Efficiency and Water Conservation**

Two Rivers Magnet serves students from over 20 towns, and from as far away as 23 miles. While this adds to our transportation impact it also supports the broad diversity we have in our school. We utilize our buses as efficiently as possible, picking up students from several towns on each bus when possible to fill seats and reduce energy consumption. Additionally, many parents opt to carpool in towns where only a few students attend, so even though our students travel many miles, they do so as efficiently as possible. While we cannot provide information about our families to others, we have sent emails offering to connect interested families in carpooling. Several staff also opt to carpool together, and a few bike to work in nice weather. Our staff carpool or walk from Two Rivers to the CT Convention Center in Hartford to our annual “Fallstaff” event at the start of school, and we walk with our students to Hartford for field trips to the Science Center as well as for our annual Dragon Boat day on the Connecticut River.

Some of our sinks have automatic sensors, and students are reminded to turn off faucets when not in use. We are still in the final stages of finishing our greenhouse, which will use rainwater barrels to collect water for our plants.

### **Step 7: Green Purchasing and Waste Management**

Two Rivers strives to foster awareness for and increase waste reduction among students and staff. Each classroom has a recycling bin with a sign posted with reminders of what can and cannot be recycled. We have single stream recycling, and student recycling teams empty classroom bins into larger receptacles which are then removed by the custodial night staff. We average 4 90-gallon bins a day of materials that are diverted from the waste stream.

We also started our composting program last year, and currently remove between two and four ninety-gallon receptacles of compostable material each week. Given that compostable matter generally makes up about twenty percent of refuse, helping us to reduce our greenhouse gas emissions by redirecting compost from the incinerators. We compost pre-consumer food waste from our kitchen as

well as food that is uneaten by students. Student volunteers take compost buckets to lunch tables and students scrape their uneaten food scraps into those buckets. We work with a small company to have



**Figure 10 A student deposits organic scraps from her lunch. Bucket contents are collected by student team members and sent to a commercial composter.**

the food commercially composted, which allows us to compost meat and bones in addition to plant based matter. The company takes our compost, and in return delivers fresh compost to the school. Our trash bags are made from recycled plastic, and we use compostable bags to collect the food scraps during lunch. As a result of our increase in school wide recycling, we have increased our recycling pickup from once a week to twice a week, and have diverted between 180-360 gallons of compostable materials from incinerators to commercial composting operations weekly.

Students are rewarded for their conservation behaviors, with payments of “River Bucks” which they can redeem for privileges such as eating lunch outside. In good weather, there are

as many as 50 students a day enjoying this benefit. The Bucks can also be redeemed at the Holiday Store, ‘purchasing’ repurposed items that staff and families donate.

Two Rivers uses single stream recycling and follows CT recycling laws. In addition to diverting much of our waste to either compost or recycling, we encourage students to leave milk, juice or fruit that they do not intend to eat on a table outside of the lunch line. Students who would like more to eat can help themselves to those items, and often coaches and teachers will take the fruit to give as snacks for students in after school programs. Any milk or juice that is not taken within a given lunch period is composted.

Hazardous materials are stored in a locked chemical closets according to their labels. Any instruments containing mercury were disposed of through a hazardous waste company several years ago. We maintain MSDS safety sheets for all chemicals, and each science classroom has a chemical safety clean up kit as well as eyewash and shower. Staff are trained on proper safety measures and all students review safety procedures at the start of each year. Students and their parents are required to sign safety contracts before taking part in any lab activities.

In summary, Two Rivers has and continues to work towards building a community of environmentally conscious citizens. Through classroom activities, field studies, and green practice, we strive to impress upon our students the importance of and need for making environmentally conscious choices, both when choosing products and disposing of them. We firmly believe that by exposing our students to nature first hand, they will begin to develop an appreciation and subsequent passion to protect it.

Both Two Rivers Magnet High School and Middle School staff have led their district in initiating the creation of a website that will document the schools’ compliance with the Connecticut school environmental laws.