



West Virginia
Conservation Agency

WEST VIRGINIA SOIL TRAILER

Aimee Figgatt, Education and Outreach Specialist

afiggatt@wvca.us

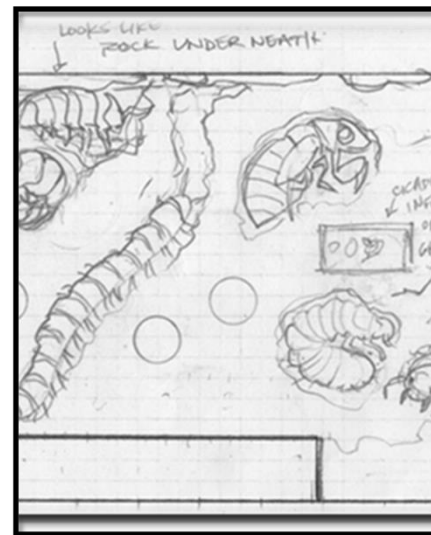
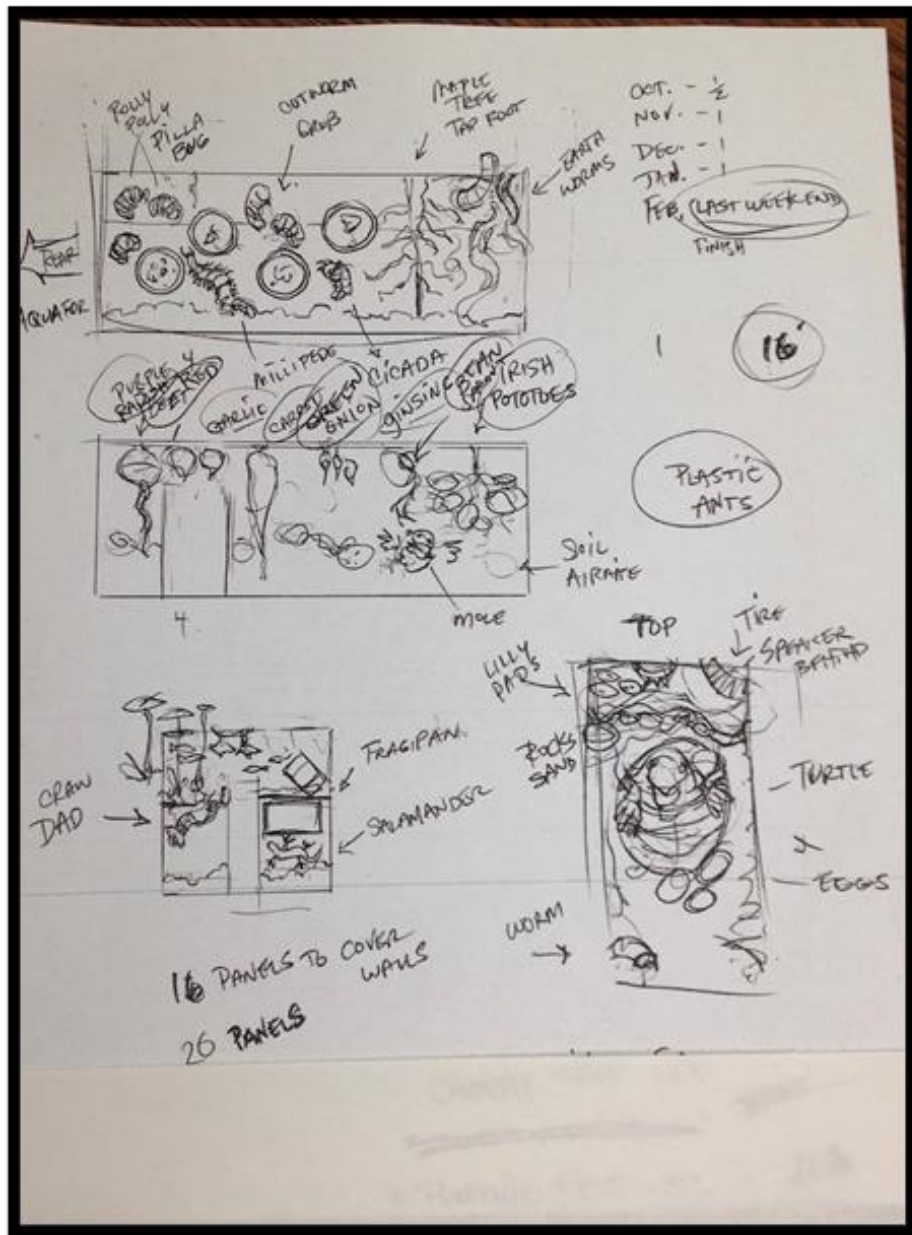
Inspiration!

- Attended the February 2012 NACD Conference in San Antonio, Texas.
- During the conference I was inspired by the ***Miami County, Kansas Conservation District*** presentation about the ***Kansas Soil Tunnel Trailer***.
- Miami County Soil Conservation District graciously provided information about their project.
- ADA accessibility in the design was the priority in this project to ensure a safe and inclusive environment for all students.
- Learning a new way to construct the interior walls would be a necessity. WV mountainous roads and terrain would need flexible materials to withstand transportation.

Kansas Soil Tunnel Trailer



Photo Courtesy of Miami County, Kansas Conservation District



The first sketches were rough but helped give a visual idea that helped "sell" the idea to the conservation district board of supervisors.

The West Virginia Soil Trailer

Grants and Funding

\$ 8,238 Capitol Conservation District purchase of trailer (2012)

\$10,800 2012 USDA Specialty Crop Block Grant, administered by the WVDA. (2013)

\$ 3000 DEP Litter Control Grant (2015)

\$ 2000 WV American Water Environmental Grant (2015)

\$20,000 West Virginia Conservation Agency Support (2017)

Specifications and Cost

- **Purchase: July 16, 2014**
- **Purchase Price:**
\$8,238.00
- **18' Length**
- **8' 6" Width**
- **7' Height**
- **Screwless aluminum panels**



The trailer was a completely blank slate inside with interior walls that are framed and covered with ¼" plywood per specification.

The task seemed daunting for someone with very little construction experience. I had to learn quickly about materials, adhesives, chemical hardeners, foams.

As an artist, my mind could see the end result, but I had no idea just yet what path I would take to get to that. The project consumed the majority of my days. I had so much to learn to achieve the goal!



The 5 inch, 5lb expanded polystyrene foam was glued, then anchored to the walls and ceiling. Our foam was purchased at a roofing supply company. This foam is also used for boat docks and architecture. Hot tools are used to carve. If you can imagine, carving all of this with a hot wire the size of fishing line!





Carving went on for approximately 4 months. The finished carved foam was then base coated with Kiltz Primer and sprayed with StyroSpray 1000 foam hardener. **I do not recommend this method!** Please consult a professional paint shop to spray your foam hardener coating.

Grateful to my "little" brother Henry and his friends. They would show up when available and help with the construction. All professional carpenters and one very artistic civil engineer who took the lead, all of us - though we had no experience in carving earthworms- had a little something to offer to the project and somehow managed to pull it off!



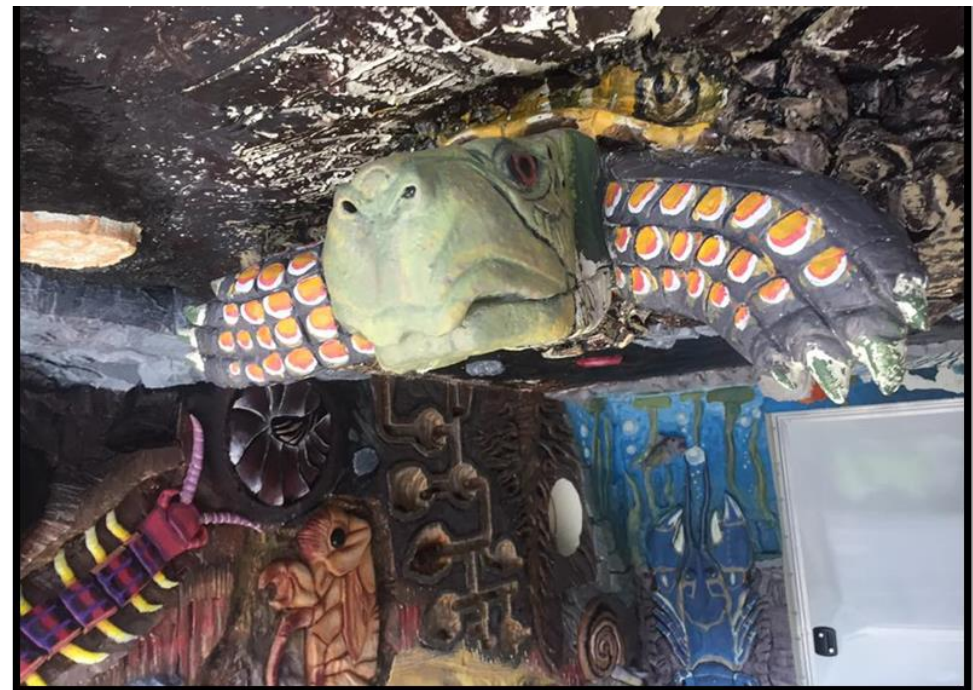
Walls after primer and StyroSpray hardener. Ready for base coat of paint colors.



Base coat of color. Six layers of color were used for the desired finish.

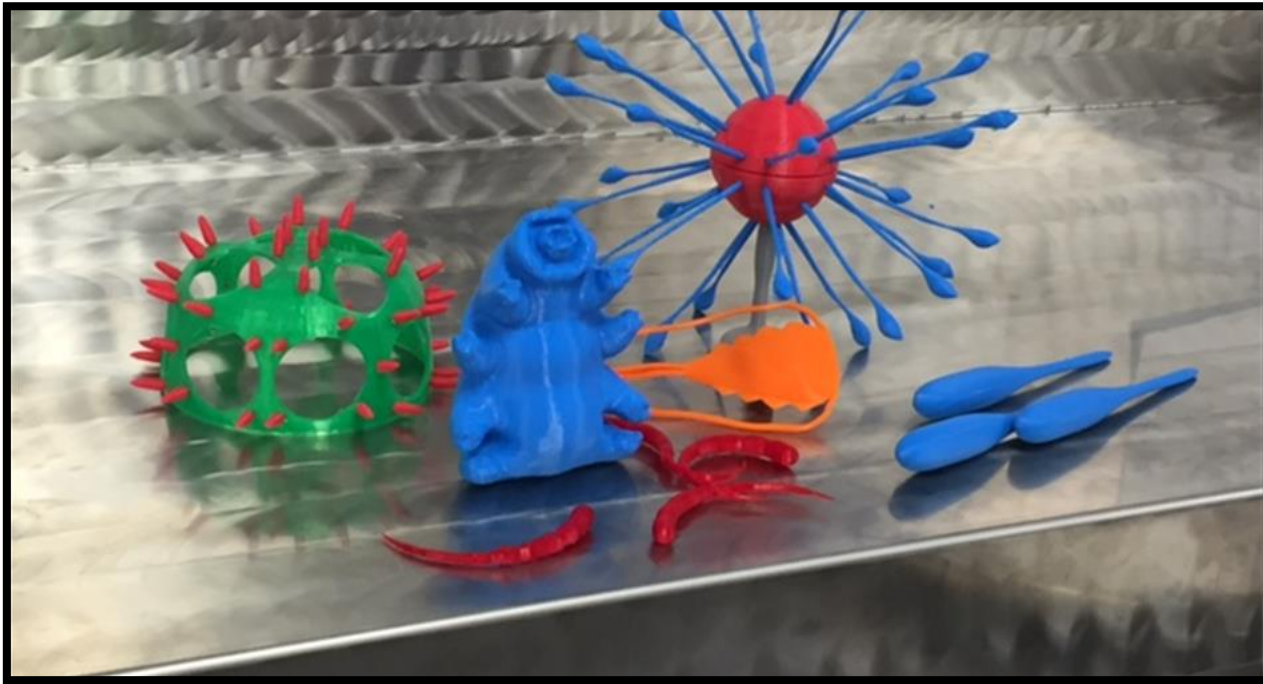


As the project went by, it continued to consume so much of my time as I was still learning as I went along. This part, however, was the easiest for me since my skill was in the detailed painting and adding finishing touches!





- 3-D prints of soil microbes for interior
- Artificial flowers on 2x8x6 boards are used for the removable roof trays
- Next build we will have aluminum trays that snap into place onto the roof fabricated for less weight and preventing trays from blowing over





Our WVCA Communication Specialist was the photographer for the Soil Trailer exterior wrap. We wanted our design to reflect our very cute "clientele"





The completed project was unveiled at the West Virginia State Fair in Lewisburg, West Virginia in August of 2016.

The project was a challenge, but we think it turned out pretty good!

The most important qualities of the WV Soil Trailer are something that you might not think about....

Give yourself 10 seconds and think about what you can see on this slide.



What do you see on this slide?

As programming educators, we need to think outside the box to accommodate all students.

For a child who is blind, a soil microbe can only be described to them. They cannot feel a real microbe or touch it to learn.

For a child who is visually challenged, it may not make sense and can cause eye strain, resulting in painful headaches.

For a child who is deaf, or hard of hearing. So much is missed during instructional time.

Less than 6% of blind, VI, deaf or HH students across the United States
receive opportunities to learn about conservation and agriculture.

Even less than that have a tactile learning tool, or any instructional inclusiveness.

ALL STUDENTS DESERVE OUR BEST

The West Virginia Conservation Agency is dedicated to supporting the educational needs of all West Virginia children.

The soil trailer is an ADA accessible unit. Designed specifically for blind or visually impaired individuals. All carvings are outlined, and we have braille placards to utilize when blind children are in attendance.

Adults and children who utilize equipment such as wheelchairs, walkers, crutches or other mobility devices have full accessibility to the soil trailer with a ADA compliant ramp to enter and another to exit.

Adults and children who are deaf, or hard of hearing have no communication barrier as the Soil Trailer presenter can present the programming in both spoken English, and American Sign Language.



Our first school visit was at the West Virginia Schools for the Deaf and the Blind in Romney. The students enjoyed the tactile learning environment and ease of accessibility.





Things I would do differently?

- Refuse delivery of trailer pending inspection of required specifications
- Legally binding contractor agreements
- Foam hardener with less odor
- Add handrails
- Add an awning before interior construction began
- **The opportunities will come to make those changes because.....**


Soil Trailer II on the way!

Currently in unit purchase. Since the manufacturing shortage is an issue, we will begin to build without the unit.

New unit will be a larger trailer. Due to the shop and storage location, we will have 26' maximum length.

West Virginia Soil Tunnel Trailer 24' (Bumper Pull) Trailer Specifications	
Aimee Figgatt afiggatt@wvca.us	
1. Trailer Body	
a. 1a. Must be enclosed with V-nose front.	
b. 1b. Must be 24 feet in length.	
c. 1c. Interior height must be a minimum of 7 feet.	
d. 1d. Interior width must be a minimum of 102 inches.	
2. Trailer Frame and Axles	
a. 2a. Trailer floor cross members must be a minimum of 24 inches on center.	
b. 2b. Trailer wall studs must be a minimum of 16 inches on center.	
c. 2c. Trailer roof bows must be a minimum of 24 inches on center.	
d. 2d. Trailer must have tandem, four-inch drop, torsion axles.	
e. 2e. Trailer must have minimum GVW rating of 14,000 lb.	
f. 2f. Trailer must have radial tires with aluminum wheels.	
g. 2g. Must have spare tire with steel wheel mounted inside V-nose front.	
h. 2h. Trailer must have 4-wheel electric brakes.	
i. 2i. Entire chassis must be undercoated or painted with a form of rust preventative.	
3. Interior	
a. 3a. Interior walls must be covered with plywood that is a minimum of 1/4 inches thick.	
b. 3b. Interior floor must be a minimum of 1/4 inch exterior grade plywood.	
c. 3c. Interior must contain a minimum of three (3) ceiling mounted 12-volt dome lights.	
d. 3d. Must contain front divisional wall with a minimum of a 32-inch-wide door with locking latch.	
4. Exterior	
a. 4a. Exterior sides must be a minimum of .030" thick aluminum painted white and fastened to the trailer by means that doesn't make screw or rivet heads visible from the exterior.	
b. 4b. All exterior lighting must be L.E.D. type and D.O.T. compliant.	
c. 4c. Front lower edge of V-nose must possess a form of protection from rock and stone chips (diamond plate gravel guard).	
d. 4d. Rear ramp must be heavy duty fold-down type, full width of trailer, with spring assist.	
e. 4e. Rear ramp must contain an ADA compliant ramp extension for wheelchair accessibility.	
f. 4f. Side entry ramp must be heavy duty fold down type with spring assist. Ramp must be located on the right side of the trailer in front of the axle with a minimum width of 36 inches and a height equal to that of the interior height of the trailer.	
g. 4g. Side entry ramp must contain an ADA compliant ramp extension for wheelchair accessibility.	
h. 4h. All doors must possess two locking latches.	
i. 4i. Side and rear slide out awnings (manual) OPTIONAL	
5. Miscellaneous	
a. 5a. Trailer must have stabilizer jacks on all four corners.	
b. 5b. Must have a minimum 3-year warranty.	

West Virginia Soil Tunnel Trailer Gooseneck Trailer Specifications	
Aimee Figgatt afiggatt@wvca.us	
1. Trailer Body	
a. 1a. Must be enclosed 32' gooseneck.	
b. 1b. Must be 24' in lower deck length.	
c. 1c. Interior height must be a minimum of 7 feet.	
d. 1d. Interior width must be a minimum of 102 inches.	
2. Trailer Frame and Axles	
a. 2a. Trailer floor cross members must be a minimum of 24 inches on center.	
b. 2b. Trailer wall studs must be a minimum of 16 inches on center.	
c. 2c. Trailer roof bows must be a minimum of 24 inches on center.	
d. 2d. Trailer must have tandem, four-inch drop, torsion axles.	
e. 2e. Trailer must have minimum GVW rating of 14,000 lb.	
f. 2f. Trailer must have radial tires with aluminum wheels.	
g. 2g. Must have spare tire with steel wheel.	
h. 2h. Trailer must have 4-wheel electric brakes.	
i. 2i. Entire chassis must be undercoated or painted with a form of rust preventative.	
3. Interior	
a. 3a. Interior walls must be covered with plywood that is a minimum of 1/4 inches thick.	
b. 3b. Interior floor must be a minimum of 1/4 inch exterior grade plywood.	
c. 3c. Interior must contain a minimum of three (3) ceiling mounted 12-volt dome lights.	
d. 3d. Must contain and interior storage closet as seen in drawing with a standard width locking latch swinging exterior door that opens to the left with a door holder/latch holder catch.	
4. Exterior	
a. 4a. Exterior sides must be a minimum of .030" thick aluminum painted grey and fastened to the trailer by means that doesn't make screw or rivet heads visible from the exterior.	
b. 4b. All exterior lighting must be L.E.D. type and D.O.T. compliant.	
c. 4c. Front lower edge of nose must possess a form of protection from rock and stone chips (diamond plate gravel guard).	
d. 4d. Rear ramp must be heavy duty fold-down type, full width of trailer, with spring assist.	
e. 4e. Rear ramp must contain an ADA compliant ramp extension for wheelchair accessibility.	
f. 4f. Side entry ramp must be heavy duty fold down type with spring assist. Ramp must be located on the right side of the trailer in front of the axle with a minimum width of 36 inches and a height equal to that of the interior height of the trailer.	
g. 4g. Side entry ramp must contain an ADA compliant ramp extension for wheelchair accessibility.	
h. 4h. All doors must possess two locking latches.	
i. 4i. Side slide out standard sized awnings covering side door and maximum of trailer side as possible (manual)	
j. Ramps removable?	
5. Miscellaneous	
a. 5a. Trailer must have stabilizer jacks on all four corners.	
b. 5b. Must have a minimum 3-year warranty.	

QUOTE		
DATE: February 17, 2021		
MFG Haulmark		
FOR: Transport		
8.5 x 24'		
June / July Delivery		
White in Color		
304-380-6336		
DESCRIPTION	MSRP	SALE PRICE
2021 Haulmark Transport - 10 k gvw	\$9,615.00	\$7,995.00
7' height added	\$426.00	\$384.00
rear ramp door in rear	\$402.00	\$361.00
side ramp door	\$298.00	\$268.00
treated plywood floor	\$560.00	\$504.00
framed partition wall	\$553.00	\$498.00
rear stab jacks	\$163.00	\$138.00
front scissor jacks	\$198.00	\$159.00
18' awning	\$2,235.00	\$1,788.00
freight	\$1,042.00	\$888.00
TOTAL		\$12,983.00
		
THANK YOU FOR YOUR BUSINESS!		

Where are we now?

- 2018 the Soil Trailer moved to the state agency from district due to demand.
- WVCA continues to invest in the Soil Trailer education and outreach programming.
- Full time employee dedicated to the program.
- New build shop in a safe, secure location.
- Funding, IT and administrative support.
- Additional programming expanded.





West Virginia Soil Tunnel Trailer Camp Application and Contract

The WV Soil Tunnel Trailer is a mobile soil conservation education unit operated by the West Virginia Conservation Agency that is available for educational use throughout West Virginia's 14 Conservation Districts.

Date(s) of Rental: 4 / 11 / 2019
 Applicant Organization: Boy Scouts Environmental Day
 Contact Persons Name: Keith Smith Phone Number: _____
 Address: Camp Kootaga City: Walker
 Zip: 26180 County: Wood State: West Virginia

The following daily rates are all inclusive and include insurance coverage for all liability, damage or negligent acts caused by the West Virginia Soil Tunnel Trailer and its operators. Make all funds payable to the West Virginia Conservation Agency. All funds will be used to promote soil conservation education in West Virginia.

Camp Base Rate \$200.00 per day (8-hour maximum, including transport time)	\$ 200.00
\$40.00 each consecutive hour (or portion thereof) after 8 hours	\$ _____
Mileage \$.75 per mile (based on current fuel prices for trailer transport)	\$ _____
Total Estimated Miles <u>180</u> x \$.75 =	\$ 135.00
Staffing Extra Staffing _____ @ \$10.00 per hour	\$ _____
Lodging Current State Rate	\$ _____
Total Amount	\$ 335.00

By my signature below, I agree to the above rates. I understand that the WVCA, and its representatives, shall not be legally responsible for any acts of members of the public, students, teachers or parents or the renter involving the West Virginia Soil Tunnel Trailer and its operation.

Keith Smith N/A
 Printed Name of Organizer Signature of Organizer Date
 Aimee M. Figgatt
 Printed Name of WVCA Representative Signature of WVCA Representative 05/02/2019
 Date

For office use only: Deposit received: Date stamp:
 PHONE: (304) 558-2204 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305 FAX: (304) 558-1635
 WWW.WVCA.US

The WV Soil Trailer visits schools (public, private and homeschool co-ops), fairs and festivals that fall within the WVCA education mission, camps and private educational events, STEM events and related conferences.

The West Virginia Soil Trailer is a rental unit.

Some of the ways that schools cover the rental fee include:

- Grants, Title 1 Funding, PTO/PTA, Local business sponsorship (example, Warner Law Office, WV American Water Company, WV Landscaping and Nursery Association).
- WVCA employee assists schools who require financial aid. A scholarship form is provided.
- Watershed Groups – WVCA working towards writing funding into the base grant.
- All revenue is utilized for Soil Trailer Programming.



West Virginia Soil Tunnel Trailer Scholarship Application

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Date(s) of Rental: 04 / 16 / 2019 to _____
 Total amount of scholarship applying for: \$ 147.75 (Please attach rental agreement)
 Applicant School or Agency: Mountain Laurel Learning Cooperative
 Contact Person Name: Maggie Lutz Phone: 304.866.8688
 Address: 1048 Cortland Road City: Davis
 Zip: 26280 County: Tucker State: West Virginia
 Name of event: Soil Trailer Day
 Number of students and adults: 45
 Please explain the purpose of event: Soil Trailer Day at Mountain Laurel Learning Cooperative

Event focus:
☒ Soil Conservation ☒ Water Conservation ☒ Agriculture
☒ Non-Point Source Pollution/Litter Control ☒ STEM education

Printed Name of Applicant Signature of Applicant Date
 Aimee M. Figgatt
 Printed Name of WVCA Representative Signature of WVCA Representative 04/10/2019
 Date
 Office Use Only: Approved by: _____ Fund Code: _____
 PHONE: (304) 558-2204 1900 KANAWHA BLVD., EAST CHARLESTON, WV 25305 FAX: (304) 558-1635
 WWW.WVCA.US

COVID 19

Unfortunately, COVID 19 did put a halt to the WV Soil Trailer programming for the majority of 2019, and all of 2020. We are taking this time to put focus on other curriculum development, and outreach programming that fit the virtual schooling, home schooling and work-from-home needs of the families within West Virginia.

Our outreach stayed very strong, with a reach of over 20,000 in FY21 by utilizing technology available to us thanks to the WVCA Information Technology Team. *(we call them the "Grand Wizards"!)*



Due to COVID-19 concerns, the WV Soil Tunnel Trailer event and travel schedule is temporarily suspended until further notice. Events cancelled will be given priority for rescheduling. Please contact soiltrailer@wvca.us for updated information

The West Virginia Soil Tunnel Trailer (WVSTT) is an 18-foot tandem-axle box trailer that serves as a mobile learning unit for soil, water, agricultural specialty crops, and non-point source pollution. This dynamic mobile unit is stationed in Kanawha County, and is available to service all of West Virginia.

In spring of 2020 we expect to be moved into the new shop for construction to begin on the new Soil Trailer. While we wait for the new unit, we will begin the foam carving and construction on plywood panels.

We plan to host a "How To" workshop when we can safely do so. We hope you can join us! (Tentative date: June 2022)





I hope you have enjoyed this presentation.

Questions?

For Soil Trailer outreach program information please contact:

Aimee Figgatt, Education and Outreach Specialist
afiggatt@wvca.us - 304.957.1400