

Electric Tricycles (Etrikes) for Seniors Information & Etrikes Comparison

tinyurl.com/etrikescompare

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07 July 2023

All moving vehicles are dangerous, be careful!

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Hugh & Dave are willing to answer email questions about etrikes.



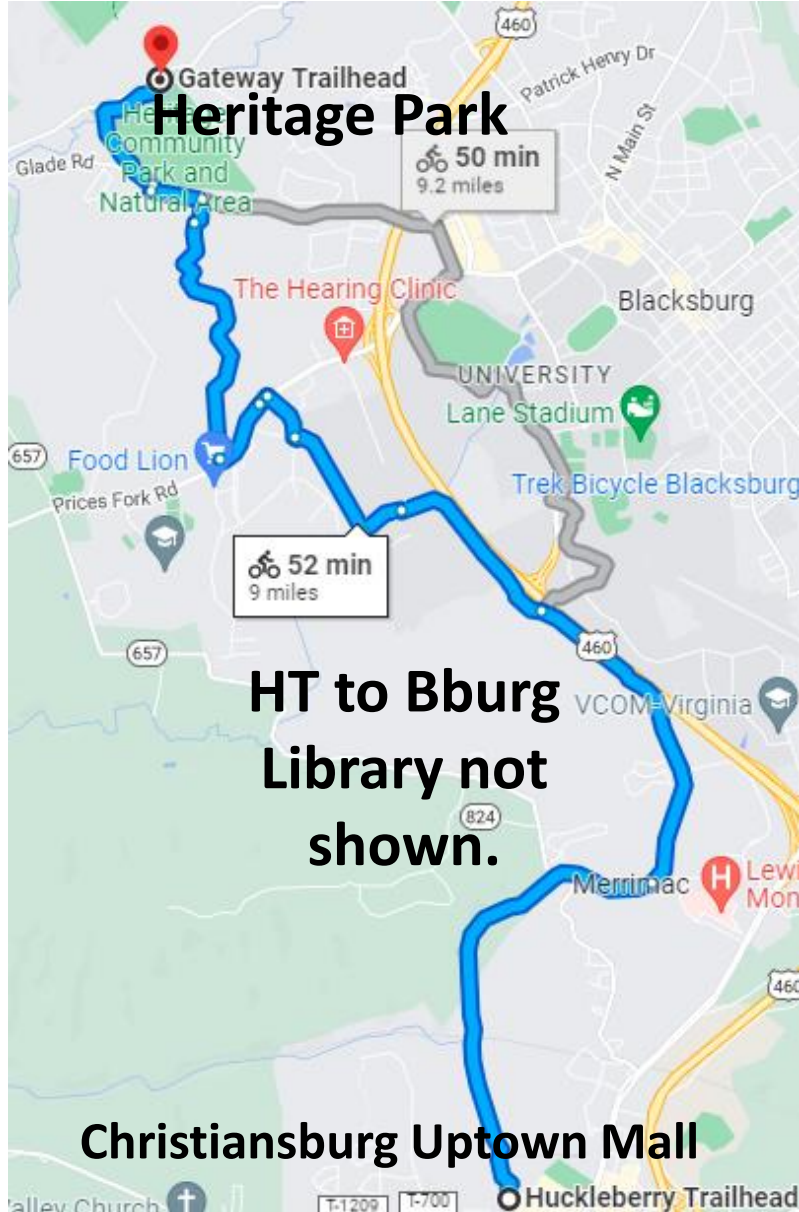
**Greater than 45 slides;
there is not time to
discuss all of them.
Write down web link
above so you can look
at all slides at home.**

Hugh Osmus & Dave Roper on Etrikes

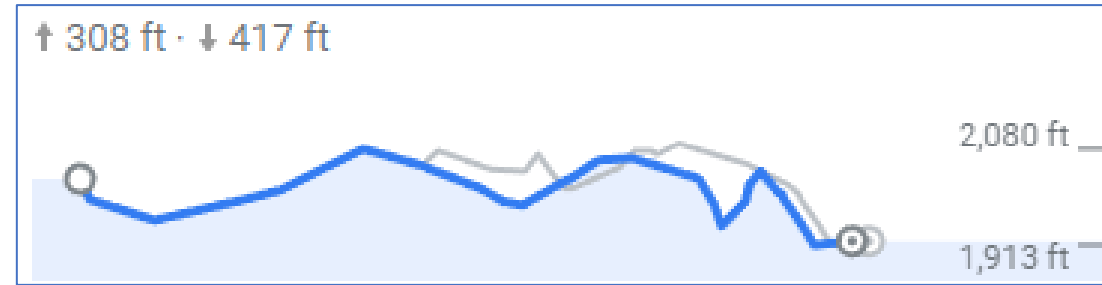
500'x12' curvy wood bridge on North Huckleberry Trail



Huckleberry Trail (HT) in Blacksburg & Christiansburg



- Extends from Christiansburg High School (CHS) to Blacksburg Library and to Gateway Trailhead. HT Trailhead is at Christiansburg Uptown Mall, 2.4 miles north of CHS.
- North HT, starting at US460 tunnel, has some steep hills:



This elevation curve is for the map on the left, bottom to top. There are curves on steep hills, which are especially dangerous for turning over etrikes at high speed. Keep seat height low.

- To safely drive a heavy etrike on North HT you need a 750W motor and a hydraulic front brake. Trek Bicycles Blacksburg can convert mechanical disc brakes to hydraulic disc brakes. <https://thelostco.com/blogs/blog/2-piston-vs-4-piston-mtb-brakes> for DIY.

Why Etrikes for Seniors?

- There is the 15-miles Huckleberry Trail and many trails in towns.
- Most etrikes are easy to mount and dismount with “step through”.
- 3 wheels of etrikes eliminate falling when mounting and dismounting than is the case for ebikes.
- Excellent legs and arms exercise with reduced weight on legs and feet, better than “biking in bedroom”.
- Enjoy nature on trails while exercising, that you might not be able to do otherwise.
- Easy to stop and talk to hikers, bikers and neighbors on streets and trails, while sitting on an etrike, increasing community connections. Dave & Hugh often stop to talk.
- Carry much stuff in a large rear basket (insulated liner available).

Why Etrikes for Seniors?

- About 50 times less weight than a standard sedan car.
- Greatly cut down carbon emissions, instead of driving polluting gasoline cars for errands.
- Greatly cut down energy use, instead of driving electric cars for errands; ~1500-MPGe vs 130 MPGe.

Selecting an Etrike for Seniors

- Step-through for easy mounting and dismounting.
- Backrest on seat. (Not all etrikes have this.)
- 750-watts, 48-volts motor if your area has high hills.
- Greater than 500-watt-hour battery for long trips.
- Fat (4" wide) tires at low pressure for comfort and accessibility.
- Electric pedal assist and throttle. (No throttle on some etrikes.)
- Mechanical disc brakes on all wheels with motor cutoff; hydraulic brake on front wheel best for **steep-hills driving**.
- Parking brake. (Not all etrikes have PB, so add bands.)
- Bell or horn to warn pedestrians.
- Mirror to see what is behind you.
- Front and back baskets. (Not all etrikes have front one.)



Three-Wheels Drive on Most Etrikes

- **Two-wheels drive:** When pedal-assist is off or set to 0, power is through the rear wheels by mechanical pedaling.
- **Front-wheel drive:** When pedal-assist is set to 1-5 and no pedaling is done and throttle is actuated, electric power is through the front wheel. (No throttle on some etrikes.)
- **Three-wheels drive:** When pedal-assist is set to 1-5 and pedaling is done, power is from both the rear wheels by pedaling and the front wheel through electric pedal assist and, possibly, simultaneously actuating the throttle.
- 24” front wheel for speed; 20” front wheel for power.

Changing Mechanical Pedal Speed on an Etrike

- **Some etrikes have only one mechanical speed.**
Most have 5 mechanical speeds; some have 7.
- Shift only when moving, but not while pedaling.
- Shift only one number at a time.
- Shift down before a curve and shift down to 1 or 2 before stopping.
- Some etrike riders stay at 1 or 2 for easy pedaling.

Parking Brakes for Etrikes

- Some etrikes have parking, usually latches on brake levers.
- For other etrikes use strong short rubber bands or bikebrake.com.



Etrike Maintenance

- Adjust mechanical brake levers as needed. See picture.
- Check wheel-nuts tightness once a month.
- Check tire pressures every few months.
- Spray [wax-based lubricant](#) on chain every 100 miles.
- Have a bike shop do a tune-up once a year.
- To push an etrike forward from the rear, use a rope attached on both sides to the handlebar to keep the front wheel from turning. See picture.



Hydraulic Front-Brake Options

- [Magura MT5](#): \$125.10, no motor cutoff, no parking brake, 4 pistons, \$45 to install by Trek Bicycles. (Dave's etrike's front brake)
- [Auriga+ HD-E740](#): \$182.06, motor cutoff, no parking brake, 4-pistons. (Hugh's etrike's front brake.)

4-Pistons are larger and hold more oil; thus, can manage heat better than 2 pistons, reducing brake fading during steep descent.

NRV Bicycle Shops

- [Bike Barn](#), 1411 S Main St., Blacksburg, 540-443-9960 , brubaelius@yahoo.com
- [Hokie Spokes](#), 200 Country Club Drive SW, Blacksburg, 540-552-7765
- [Trek Bicycle Blacksburg](#), 1400 S Main St., Blacksburg, 540-692-1378, [Blacksburg@TrekBikes.com](#) (Received, finished assembly and installed front hydraulic brake for Dave's etrike.)
- New Wheel, 1220 E Main St., Radford, 540-731-1211

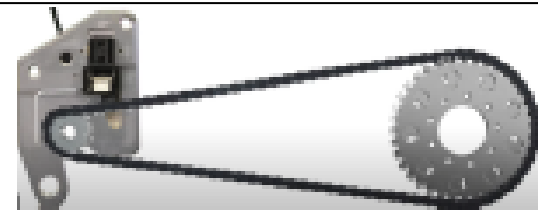
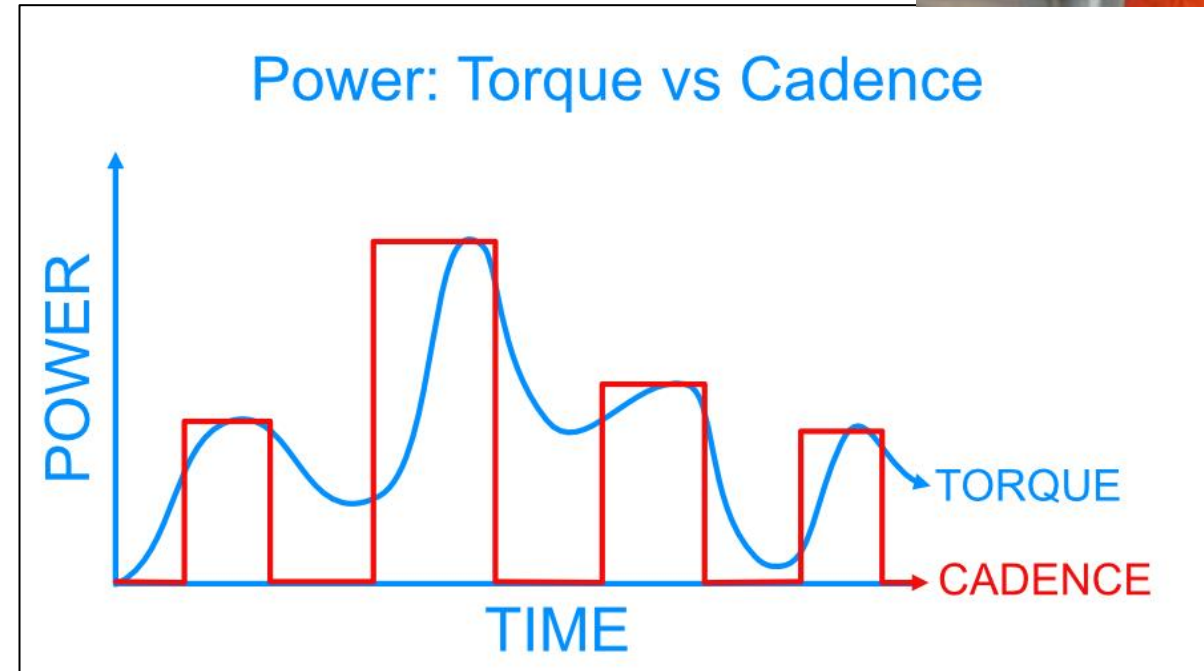
Etrike Technology

- Cadence sensor vs torque sensor in pedal assist
 - Cadence starts electric power after pedaling starts, power delay when pedaling.
 - Torque starts electric power when pedaling starts, no delays when pedaling (expensive).
- Mechanical brakes vs hydraulic brakes.
 - MBs require constant adjustment and fade quickly on steep hills.
 - HBs stop heavy etrikes quicker, require little adjustment and do not fade (expensive).
 - Get HB with good modulation (braking increases with lever force).
- 20" front wheel vs 24" front wheel
 - 20" for more power in front or rear; 24" for more speed in front.
 - 24" is smoother over small bumps and depressions.
- Front-wheel hub motor vs mid-drive motor (Most etrikes have front hub).
 - Mid-drive powers rear wheels through gear system for power and better handling.
 - Hub motor drives front wheel; can spin front wheel when starting on gravel hills.
- Fat (4") tire vs standard slim bike tire (Most etrikes have fat tires.)
 - Fat tire for comfort and driving on soft & rough surfaces, such as grass, sand and snow.
 - Slim tires for speed and maneuverability.

Torque Sensor vs Cadence Sensor



- Cadence sensor
 - Checks whether pedals are being turned. Turns pedal assist on or off using a disc of several magnets; cadence-sensor disc picture at top right.
 - Electric power is discontinuous.
- Torque sensor
 - Checks the torque applied to the pedals. which regulates pedal assist; torque-sensor picture at bottom right.
 - Electric power is smooth, more like mechanical pedaling.
 - Force on pedals without pedaling causes e-trike movement.
- Most e-trikes have cadence sensors.
 - [Adding a torque sensor to an e-trike with a cadence sensor.](#)
- [Movie comparing torque sensor and cadence sensor mechanism.](#)



Tips for Driving an Etrike

- Always wear a [MIPS \(Impact Protection\) helmet](#).
- When not on etrike, have electric power off and parking brakes on. (Not all etrikes have PBs.)
(Power is off when brakes are on for most etrikes.)
- With electric power off and brakes on, use pedals as aids in mounting and dismounting.
- Set pedal-assist to 0 (no electric) or 1 for starting a ride and vary (1-5) as desired while riding.
- Set pedal mechanical speed to 1 or 2 at last stop and vary as desired while riding.

Speeds for Speed Assists (SA) 1-5 and Throttle

- I did a some “drag racing” over a short distance on a level street (The mph numbers are rough.); end mph:
- **SA 1:** 7.7 mph, **SA 2:** 11 mph, **SA 3:** 13.5 mph
- **SA 4:** 15.5 mph, **SA 5 and Throttle:** 17 mph
- Thus, using the throttle is equivalent to speed assist 5.
- If you are on a trip using only a fraction of the battery capacity, it will be easier and better to use the throttle going up steep hills than using SA 5 and pedaling.
- Some eatrikes allow setting top speed for motor.

Tips for Driving an E Bike

- Always wear a [MIPS \(Impact Protection\) helmet](#).
- When not on E Bike, have electric power off and parking brakes on. (Not all E Bikes have PBs.)
(Power is off when brakes are on for most E Bikes.)
- With brakes on, use pedals as aids in mounting and dismounting.
- Set pedal-assist to 0 (no electric) or 1 for starting a ride and vary (1-5) as desired while riding.
- Set pedal mechanical speed to 1 or 2 at last stop and vary as desired while riding. Some e bikes have only one mechanical speed.
- Safest to use both front and back brakes together.

Safety Issues Riding Etrikes

- Keep mechanical brakes well adjusted.
- Do not make quick turns at high speeds to prevent rollover.
- At 90-degrees turns drive slowly and leave room for the inside back wheel to not go off trail or hit a barrier.
- Do not travel sideways on steep slopes to prevent rollover.
- When driving on streets, obey all traffic laws.
- Use standard arm signals before making turns on streets.
- On trails give an audible signal, mechanical or voice, when passing pedestrians or vehicles.
- On trails give approaching vehicles a wide berth by staying to the right.

Safety Issues Riding Etrikes

- Tell someone where you will be riding and when you will be home. **Ride with a companion etriker/ebiker** when possible.
- Carry a emergency kit with band aids, scissors, burn ointment and triple-antibiotic ointment. Include a list of loved ones' contact information
- If battery energy is more than sufficient for the trip, turn on the etrike lights and display backlight.
- Have flashing battery-powered LED red lights on the back of your etrike. Attach a high bright flag or wear a bright jacket.
- Reduce distractions while driving; reduce looking at the display to the minimum needed.

Tips for Driving an Etrike on Turns and Hills

- Etrikes can roll over turning at high speeds or on near-90-degrees turns at low speeds. When going down hills and making turns, reduce pedal assist, apply brakes as needed to **keep speed low**. Adjust seat to lowest setting.
- In curves and turns, lean into the direction of curvature to keep the downward force inside the curve. The tendency to roll over is proportional to the height and location of the center of gravity.
- Before going up a steep hill, have a speed above 10-mph at bottom and apply full power, preferably using the throttle instead of pedaling, going up.
- Avoid stopping on hills; restarting may spin the front wheel.

When a Heavy Ebike/Etrike Stops Going Up a Steep Hill

1. Do not try to go back down the hill either backwards or frontwards
2. Put on both parking brakes.
3. Get a long rope to attach to the front of the etrike, to pull it up the hill, or get enough people to push it up the hill. (Keep a 10-ft or longer rope in the basket.)
4. For both cases have one person hold onto one side of the handlebar to keep the front wheel headed up the hill; otherwise, it will turn toward the side.

When to Graduate from Bicycle to Ebike to Etrike

- Ride a bicycle from childhood until you have difficulty going up hills.
- Ride an ebike until you have balance problems getting on and off it.
- Ride an etrike until you start making safety mistakes due to aging.
- Ride a stationary bike.

Smart-Phone Usage

- For safety, carry your smart-phone in a [secure holder](#) on the handlebar.
- Set it to the highest display brightness.
- Do not look at it while driving.
- To check a phone or other map for a trip, first stop the etrike and set the parking brake.
- To check a phone call and, possibly, answer it, first stop the etrike and set the parking brake.
 - Do that even if you have a Bluetooth connection to earphones.

When a Heavy Ebikes/Etrikes Stops on a Steep Hill

1. Do not try to go back down the hill either backwards or frontwards
2. Put on both parking brakes.
3. Get a long rope to attach to the front of the etrike, to pull it up the hill, or get enough people to push it up the rest of the hill. (Keep a 10-ft or longer rope in the basket.)
4. For both cases have one person hold onto one side of the handlebar to keep the front wheel headed up the hill; otherwise, it will turn toward the side.

Etrike Riders Group?

- If you get an etrike and want to be informed when Hugh and Dave are going on an etrike trip, send your email to one of us. If several want to join in senior “companion rides”, we could separate into 2-4 riders in each companion group.
- If such an informal group forms, we will inform its “members” about a planned trip and the meeting place; usually it will be at the US460 Huckleberry tunnel circle.
- Also, senior ebikers are invited to join in companion rides.
- If etrikers want further meetings to discuss etrike issues and experiences, let us know that.
- Hugh and Dave always welcome questions about etrikes
 - Hugh: OldOzzie@hotmail.com; Dave: ROPERLD@vt.edu.

Riding in Cold Weather

- Wear a balaclava under the helmet.
 - Protects hearing aids and eyeglasses.
- Wear long underwear for body warmth.
- Wear cycling windproof colored jacket.
- Wear cycling winter gloves.
- Keep battery warm when at home.
- Range will be reduced.
- Etrikes should not be driven in heavy rain.



Storage for an Etrike

- An etrike needs to be stored inside a waterproof structure or cover to protect the electronics, which usually is water resistant, but not waterproof.
- If no structure is available for storage, [Anywhere Bikes has a cover for \\$145](#), with free shipping, that would probably fit any etrike: It has drawstrings in the front and back and 2 grommets at the bottom of the sides for using two 1.5' & 2'-bungee cords to keep wind from blowing it off. It comes in a small sturdy box, that is good for its storage:



20" x 6" x 6"

- **Remove the battery for charging inside.**



Transporting an Etrike Long Distances

- A pickup truck might be able to hold two etrikes. Etrikes weigh 80-100 lbs or more, so two people would be best for loading one into a pickup. One person may be able to lift one end into a pickup and then left the other end.
- A car carrier similar to a carrier for a wheel chair might work for an etrike. An etrike can be as long at 77", wider than most cars; however, on a carrier the front wheel can be turned sideways to greatly reduce the width. Here is an example of an [etrike carrier for a specific etrike](#):

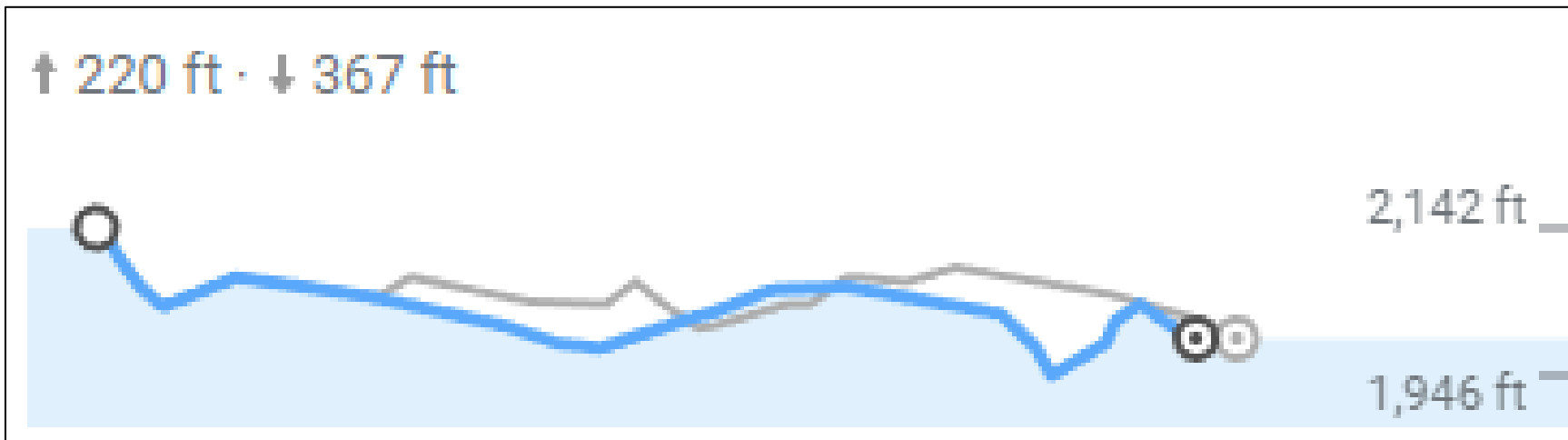
Its many dimensions would have to be obtained to see if they match your etrike.

(It folds up behind the trunk when not in use.)



Mapping an Etrike Trip

- Use [google.com/maps](https://www.google.com/maps) to see the route and elevations.
 - Use bicycle trip planning with source and destination.
 - Print cropped map and elevations (elevations example below)
- Use earth.google.com to see physical details of trip.
 - Zoom in to eventual street view of destination.
- Search for web pages about the destination and reviews.
- Search for details about any trails used.

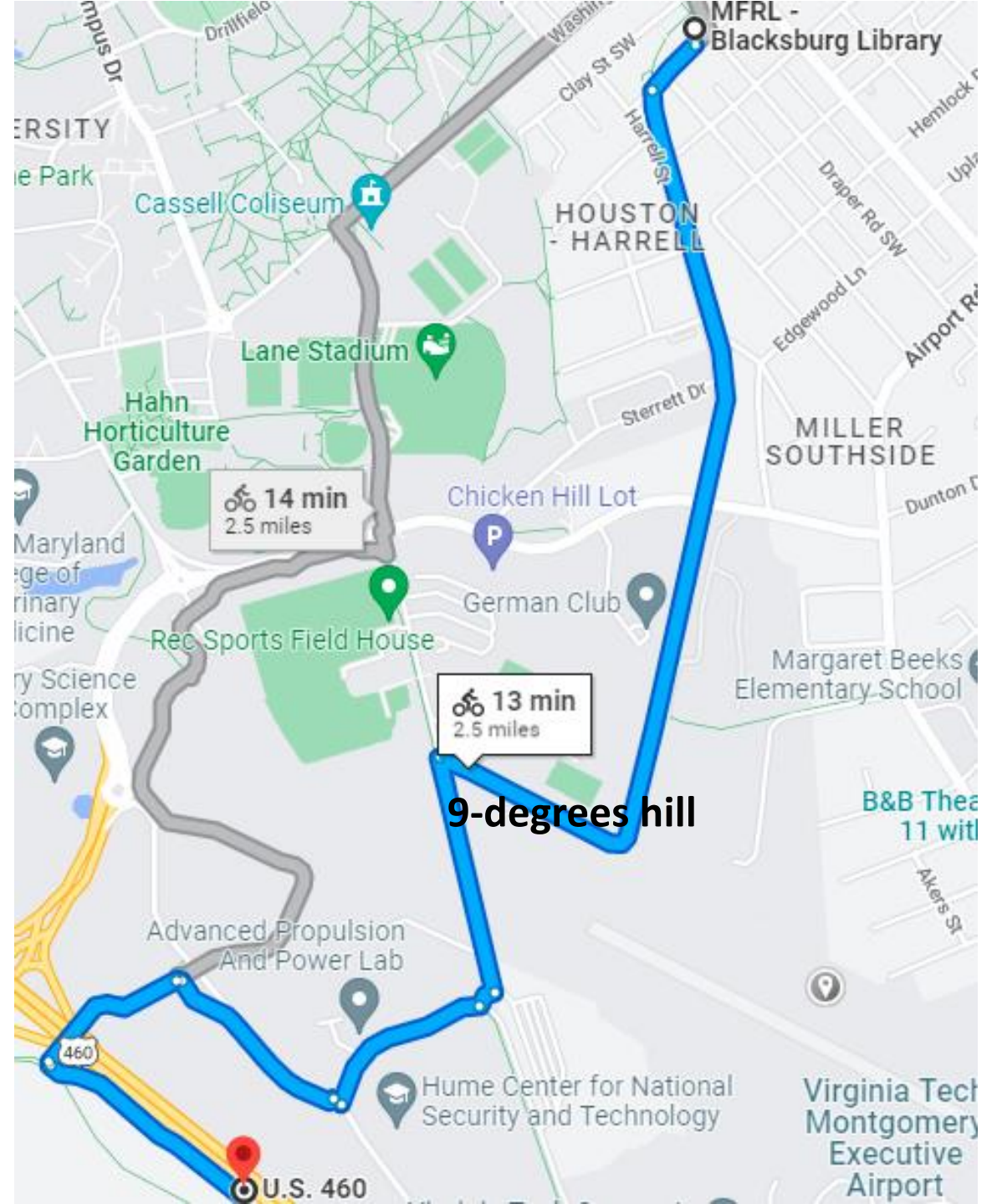


Huckleberry Trail in Blacksburg & Christiansburg

- The **original Huckleberry Trail** begins at the Blacksburg Public Library and winds through Blacksburg, Virginia Tech, Montgomery County and ends at the Christiansburg Recreation Center. This segment of the trail is approximately 8.3 miles in length. Some of it is somewhat rough and narrow.
- **Huckleberry North** begins at the tunnel-roundabout west of Route 460 and ends at Heritage Park on the north side of Blacksburg. This trail segment is just over 5 miles in length. It is wide and smooth.
- **Huckleberry South** begins on Cambria Street in Christiansburg and winds through residential neighborhoods to Christiansburg High School. This segment is just over a mile in length. It is wide and smooth.

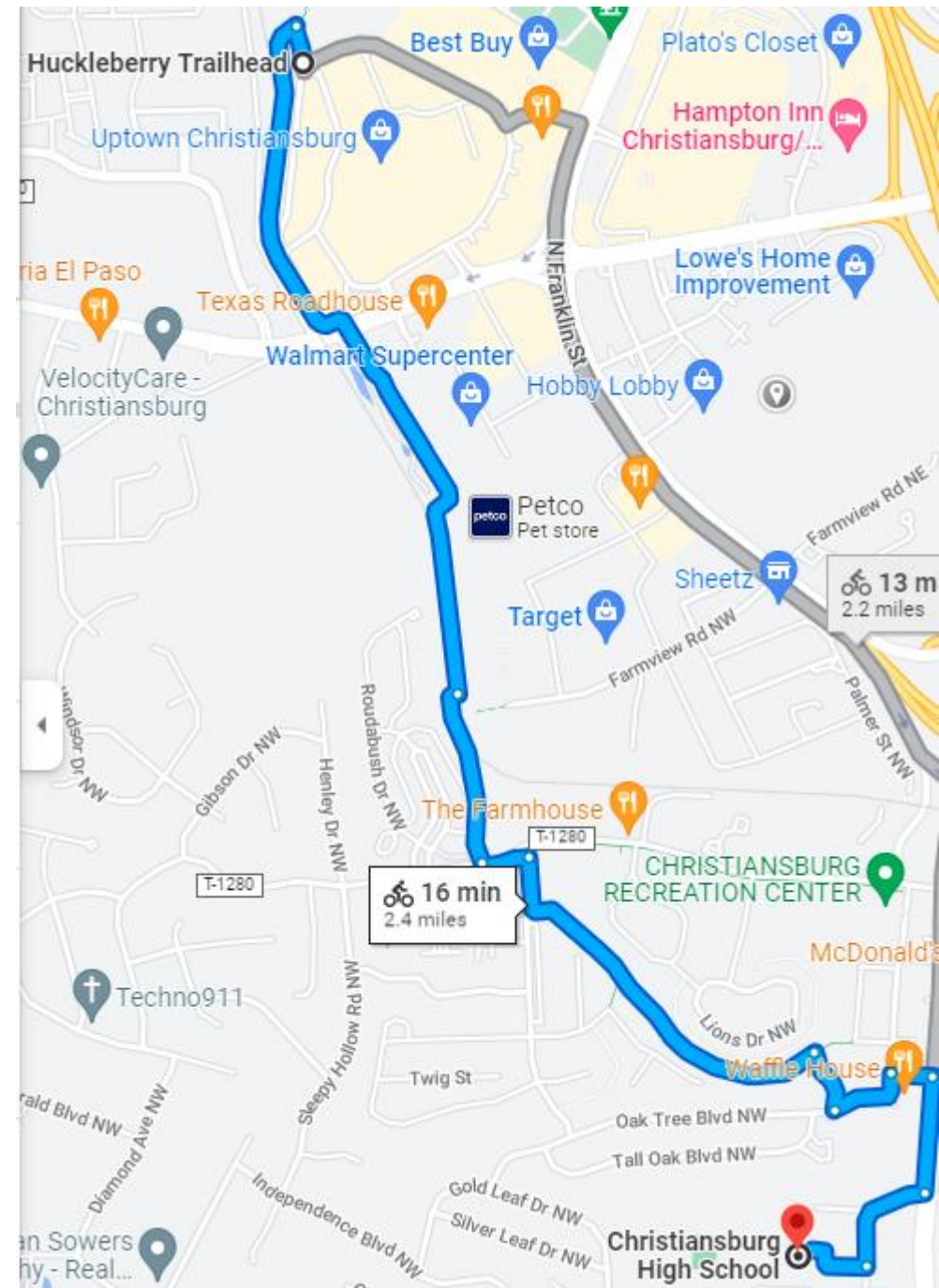
HT Library to US460: 2.4 miles

↑ 92 ft · ↓ 82 ft



HT Trailhead to CHS: 2.4 miles

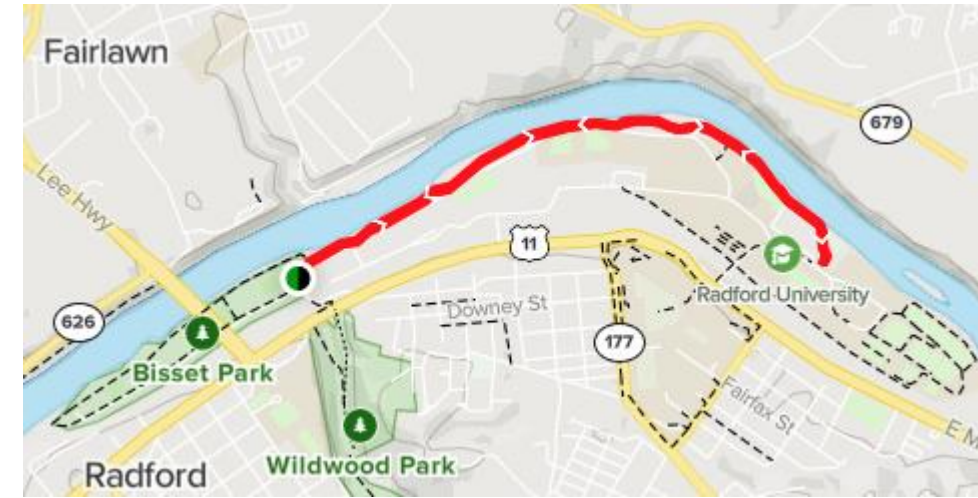
↑ 184 ft · ↓ 115 ft



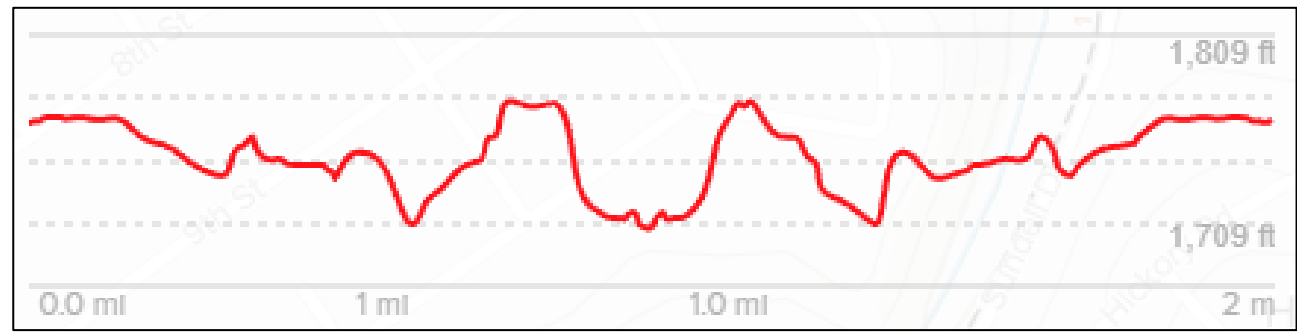
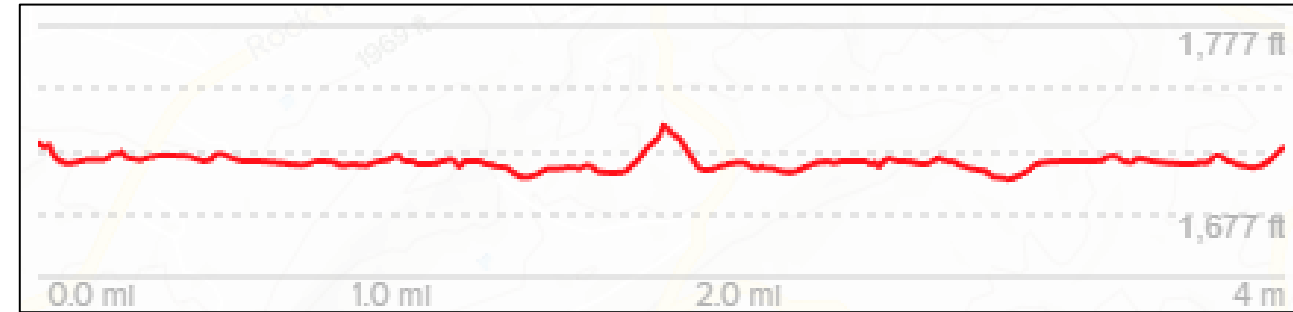
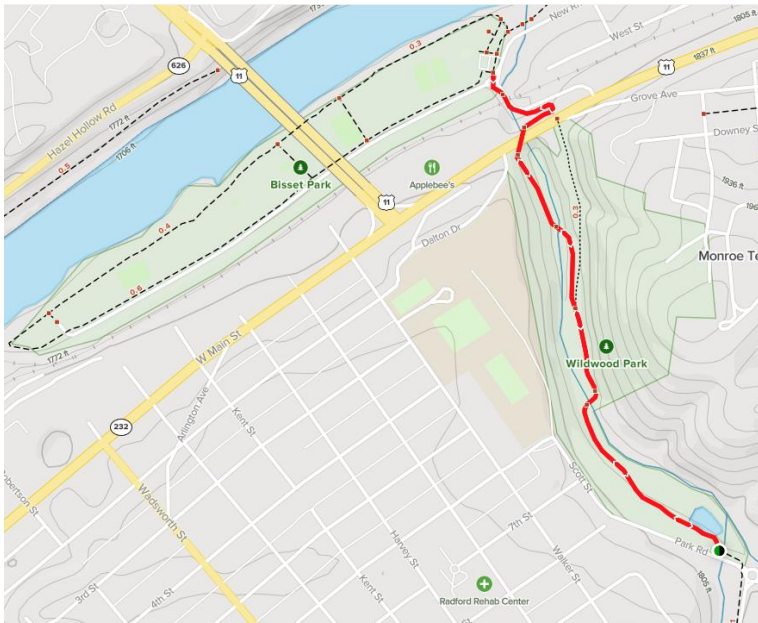
Radford Virginia Trails

If you can transport your etrike to Radford, there are two interesting trails, one easier (3.6 miles) than the other (1.8 miles):

[Bisset Riverway Bikeway and Walkway Trail:](#)

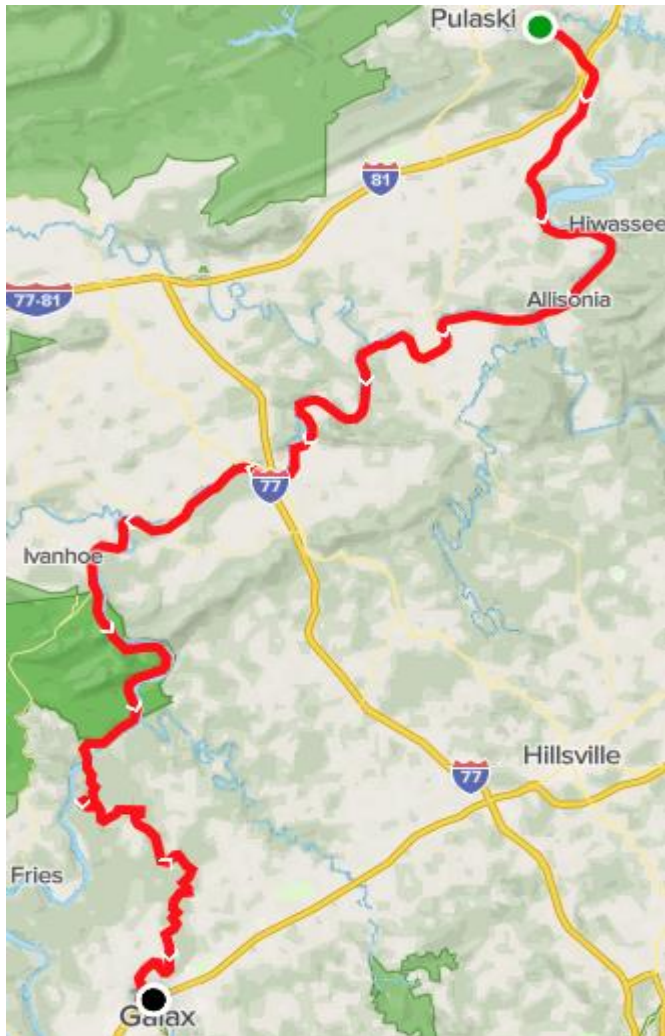


[Wildwood Park Riverway Trail:](#)



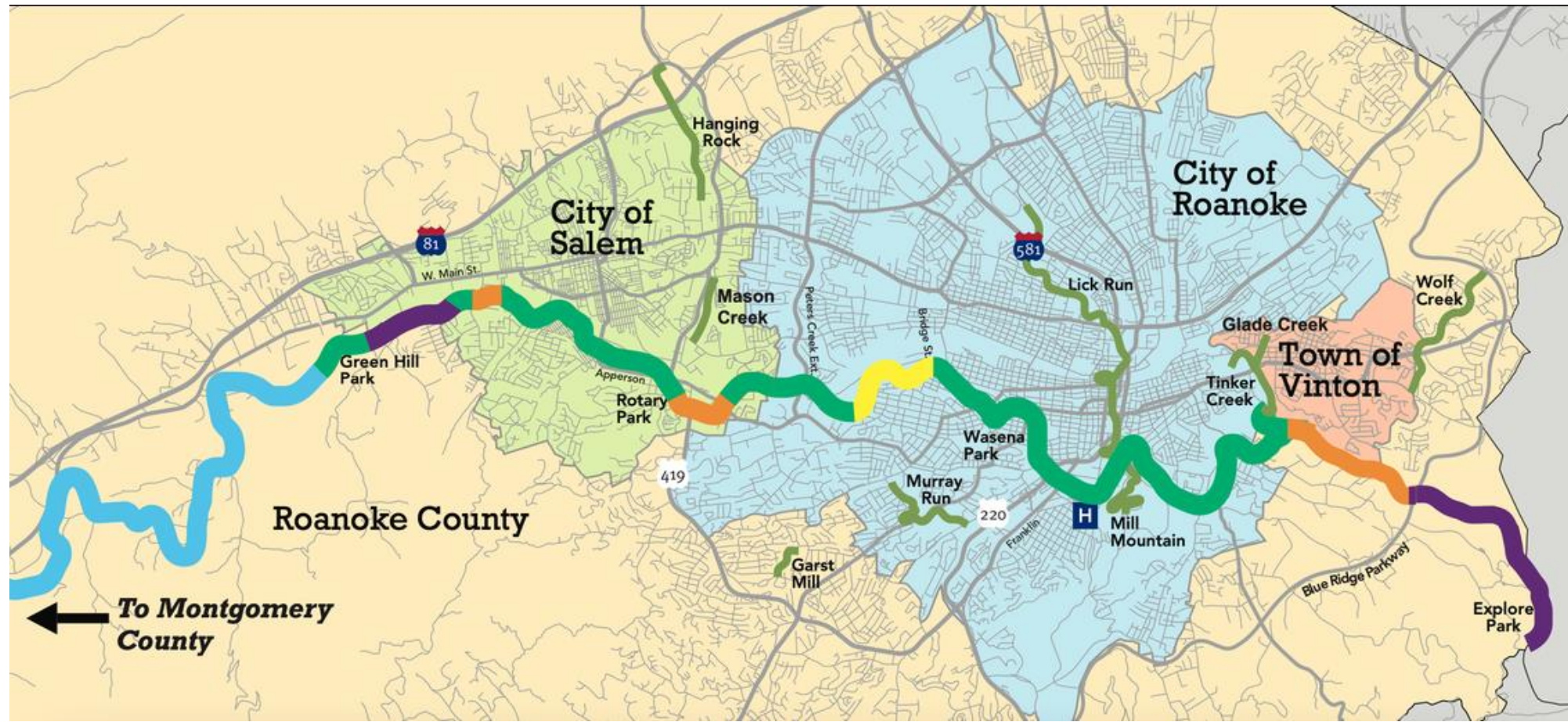
Pulaski Virginia New River Trail

If you can transport your etrike to Pulaski, you can drive on the 49.7-miles [New River Trail](#):



Valley –to-Valley Connector Study

Study about connecting Roanoke River Greenway to the New River Trail and the Huckleberry Trail



Purchasing an Etrike

- Order online at several companies.
- Some companies offer discounts from the listed price.
- Some prices include shipping costs.
- Some shipped assembled and some ~80% assembled.
- [Trek Bicycle Blacksburg](#) will agree to receive the order and finish the final assembly, if required, upon request. They can also make alterations, such as changing front mechanical disc brake to **hydraulic disc brake**, which is needed on the North HT.

Lectric XP Trike



- **500W 48V** rear-wheels motor with **differential axle**.
- 672 Wh battery; Range with pedal assist 1: 60-miles; 5: 20-miles.
- **Wheels: 20" x 2.6". Foldable for transport (38.5"x30.5"x30").**
- Weight: 70-lbs; length: 63.5", width: 30.5", step-through 13.8"
- Headlight and taillight. **Two brake lights on fenders.**
- Single mechanical speed. 5 levels pedal assist & **throttle**.
- **Front and one rear hydraulic brakes with motor cutoff.**
- **Parking brakes, cruise control, walk mode.**
- [Unboxing/first-ride video](#), [Owners Manual](#), [review video](#)
- **Back-support seat upgrade \$39.**
- Cargo package: front rack, small basket, large basket.
- **\$1,499** fully assembled (folded); free shipping.



If I were buying an e trike now, I probably would buy this one.

Addmotor M-330 P7 Triketan Etrike

- **750W 48V** front-wheel motor, 840 Wh battery.
- 55? miles range with pedal assist (**2,207 MPGe**).
- Large 5" LCD display with USB port.
- Length: 72", width: 31", step-through: 16". **No Backrest.** (**Backrest seat** \$89). **Wheels: 20" for power.**
- Weight: 83-lbs, with load: 350-lbs. Large insulated basket liner.
- Taillight includes daytime brake light.
- 7-speed mechanical pedaling. 5 level pedal assist & throttle.
- Mechanical disc brakes with **motor cutoff**. **No parking brake.**
- No cover in accessories. (Anywhere cover might work.)
- **No owner manual online.** Video. Shipping.
- \$2,799 including delivery. Assembly finishing video.



If I were buying an etrike now, this is the one I would buy.

bikebrake.com

Addmotor Grandtan M-340 Etrike



- **750W 48V** front-wheel motor, 960 Wh battery.
- 85? miles range with pedal assist (**2,984 MPGe**).
- Large 5" LCD display with USB port.
- 7-speed mechanical pedaling. [5 level pedal assist & throttle](#).
- Length: 77", width: 33.5", step-through: 17.5". Adjustable handlebar and backrest. Wheels: Front: 24" for speed; Back: 20"
- Weight: 100-lbs, with load: 450-lbs. Large insulated basket liner.
- **Multifunction tail light** (steady, brake, turn signals)
- Mechanical disc brakes with **motor cutoff**. **No parking brake**.
- Vertically-adjustable backrest.
- No cover in [accessories](#). ([Anywhere cover](#) might work.)
- **No owner manual online.** [Video](#). [Shipping](#).
- \$3,099 including delivery. [Assembly finishing video](#).



If I were buying an etrike now, this would be my 2nd choice.

bikebrake.com

Emoji Caddy Pro Etrike

- 500W 48V front-wheel motor, 749 Wh battery.
- 30? miles range with pedal assist (**1,350 MPGe**)
- Length: 78.5", width: 29.8"
- Weight: 70-lbs, load: 320-lbs.
- Interesting and useful [accessories](#).
- No cover. ([Anywhere cover](#) might work.)
- [Owner manual](#).
- \$2,899.



Back seat

Hitch rack

Insulated liner for
back basket



Addmotor Soletri M-366x Etrike for Two

- Motor: 48V 750W; Battery: 960-kWh; 1-7 pedal assist; throttle
- Range: 85-miles using PAS-1
- Tires: 20" x 4"; full suspension
- Weight: 121-lbs; Max load:450-lbs
- Headlight: 40-lumens; brake lights; turn signals; large LCD display
- Length: 76.7"; width: 33.5" ; stepover 17"; saddle: 23.5"x8.5"
- Price: \$3,099



Electric Trike Fat Etrike



- **750W 48V** front-wheel motor, 556 Wh battery.
- 26? miles range with pedal assist (**1,576 MPGe**).
- Very large LCD portrait display.
- Length: 72", width: 31", seat height: 28". **No Backrest.** (**Backrest seat** \$89). Wheels: Front: 24"; Back: 20"
- Weight: 88-lbs, with load: 350-lbs. Large insulated basket liner.
- 7-speed mechanical pedaling. **5 level pedal assist & throttle**.
- Mechanical disc brakes with **motor cutoff. Parking brake.**
- No cover in **accessories**. (**Anywhere cover** might work.)
- **Owner manual**. Large back fenders.
- \$2,932. \$250 shipping fully assembled, except fenders.

DWMeigi-1703 Etrike

- 750W 48V front-wheel motor, 874 Wh battery.
- 45-miles electric; 60-miles with pedal assist.
- **Weight: 123.5-lbs**; Max load: 330-lbs.
- 75" x 31" x 44"; 3" display with USB port.
- Pedal assist; **throttle**; 7-speed pedal. 20-mph top speed.
- Disc brakes; **parking brake**; **brake motor cutoff**. LED lights.
- Amazon: waterproof insulated bag for large back basket.
- No cover. ([Anywhere cover](#) might work.) **No backrest**.
- \$2,499. Free shipping. [Assembly required](#). [Owner manual](#).
- [Amazon.com](#)



Malisa Forza Etrike White

- 750W 48V front-wheel motor, 624 Wh battery.
- 50? miles range with pedal assist.
- Length: 71", width: 28"
- Weight: 90.2-lbs, load: 440-lbs.
- \$2,149.



Maxfoot MF-30 Etrike

- 750W 48V front-wheel motor, 840 Wh battery.
- 65? miles range with pedal assist.
- Length: 74.5", width: 34"
- Weight: 90-lbs, load: 350-lbs.
- Backrest seat.
- Mechanical disc brakes with motor cutoff.
- 7-speed mechanical pedaling.
- Insulated rear-basket liner.
- \$2,599 ([eBay used: \\$2,100](#); hydraulic brakes?)



Rungu Dualie Standard Etrike

- 1120W 52V mid-drive motor to rear wheel.
- 780 Wh battery.
- 136? miles range with pedal assist.
- 20? Miles off-road range with pedal assist.
- Length: 85", width: 13.75"
- Weight: 86-lbs, load: 325-lbs.
- Top speed: 24 mph.
- No cover in [accessories](#). Rungu recommends a motorcycle cover.
- [Owner manual](#).
- \$4,999.
- Has several versions at higher prices.



**Used by hunters
in rough terrains.**

Buzz Bikes Cerana-T Etrike

(**For mostly level driving.**)

- Mid-drive to rear, 350W 36V electric motor, 374 Wh battery.
- Four levels electric assist, **no throttle**, mechanical pedaling 7-speed.
- Tires: front: 24"x3", rear: 20"x2.25"
- 40? miles range with 4-level pedal assist.
- Length: 60", width: 40", weight: 83-lbs.
- Front & rear disc brakes; **no parking brake.**
- LCD display with USB port. Headlight.
- No cover listed. ([Anywhere cover](#) might work.)
- **No brake-on motor off**, [Owner manual](#).
- \$1,699 including delivery 90% assembled. 15% discount.



Buzz has mid-drive electric to back wheels;
Most other eatrikes have front-wheel electric drive.



[Buzz Manual](#)

EVRYjourney Tricycle

- 750W motor; 5 pedal assist levels; **throttle**
- Battery kWh-??
- 7 speed pedaling, front suspension
- Suspension-spring seat
- Back seat for 2; Back basket under seat needs a liner
- 3 wheel disk brakes
- Tires: Front: 24"x4"; Back: 20"x4"
- \$3,500



RadTrike Electric Tricycle

- 750W motor; 5 cadense electric assist levels; **throttle**
- 48V battery 480-kWh, range: 20-55 miles; 2-amps charger
- Single-speed pedaling
- 14 mph, reverse throttle motion; folding handlebar
- Seat with backrest
- Disk brake in front with parking latch, coaster brake on right back wheel
- Bright front light; brake light
- Kenda tires: Front & back: 18"x2.25"; width: 33"
- Weight: 69.5 lbs; Cargo: 415 lbs
- Many accessories, including baskets
- \$2,499



Lectric Electric Tricycle



- 500W rear motor on axle center with differential
- 5 cadence electric assist levels; **throttle**, reverse throttle motion
- 48V battery 672-kWh, 7-lbs, range 60-miles?
- 14 mph top speed; folding handlebar and frame; step-over height: 13.8"s
- Seat without backrest, backrest upgrade; handlebar height: 41.5"-44.75"
- Hydraulic brakes front and rear with parking brakes
- Bright front light; rear fender brake lights; rear center brake light
- Steel fenders; optional baskets and pet trailer
- Tires front & back: 20"x2.25"; width: 30.5"; length: 63.5"
- Weight: 62.5-lbs without battery & baskets; folded: 38.5"x30.5"x30"
- \$1,499 fully assembled



Replacing the Seat

- It may be best to replace the seat and seatpost together, to make sure that they match, there are different ways they attach.
- Most bicycle parts use the metric system rather than the English system.
- Measure the size of the post stem in mm where the seatpost slides in, to be sure that you get the correct seatpost.
- See a previous slide for a recommended seat and seatpost.

A pdf of this PowerPoint is available at
tinyurl.com/etrikescompare.

References

- [Pros and Cons of Buying an Etrike](#)
- [Tips for Riding an Electric Trike](#)
- [Making Turns on an Etrike \(video\)](#)
- [Top Etrikes of 2022](#)
- [Top 10 Electric Tricycles 2022](#)

There are more etrikes not shown here; those shown are examples of different configurations; search for others.

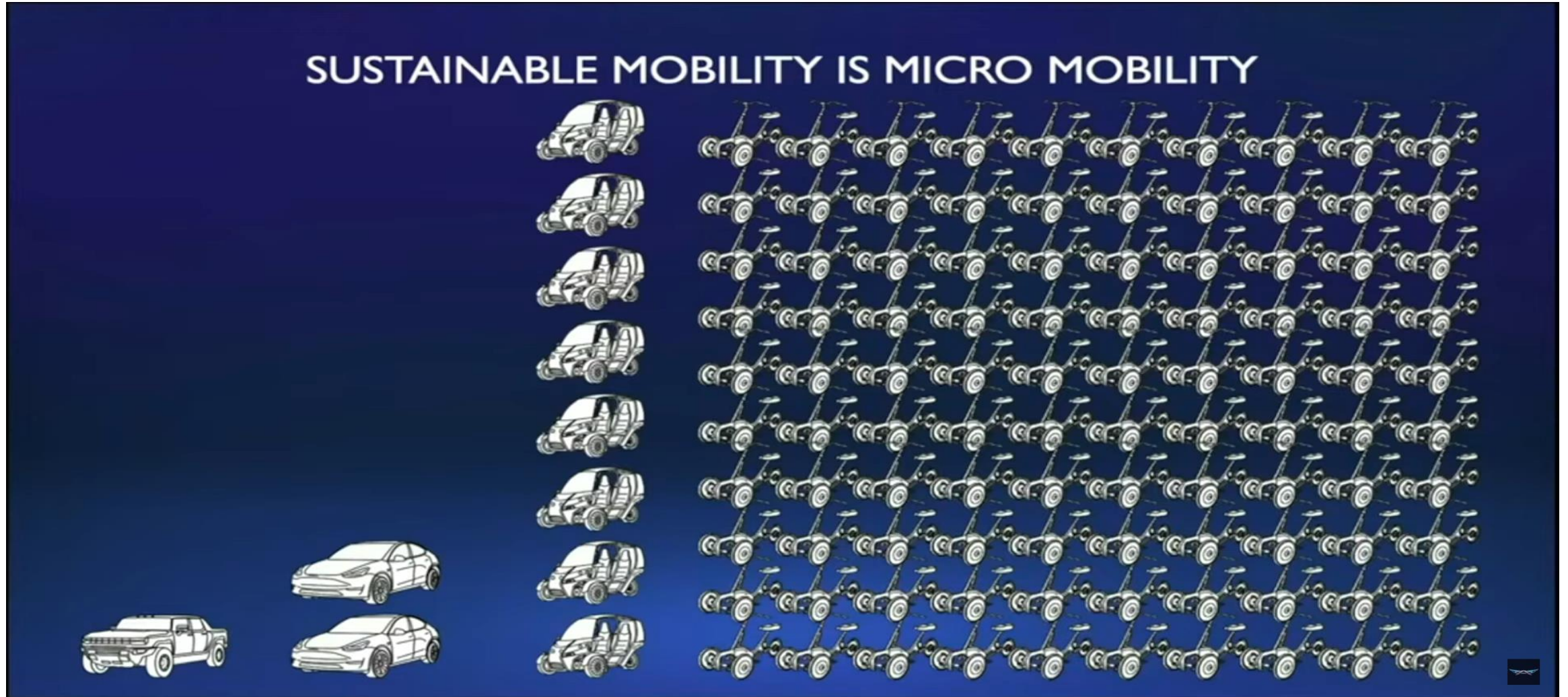
Dave Roper (ROPERLD@vt.edu and

Hugh Osmus (oldozzie@hotmail.com are willing to answer questions about etrikes.

Etrikes as Exoskeletons

- “Exoskeletons are placed on the user’s body and act as amplifiers that augment, reinforce or restore human performance. “
- An etrike allows the rider to use the brain, arms and legs to perform feats that the human body cannot do itself. Attaching to an etrike “exoskeleton” (mounting) is easier than attaching to a body exoskeleton. Some people who have trouble walking can ride an etrike with little difficulty.

Arcimotor Mean Lean Machine (MLM) (MLM)

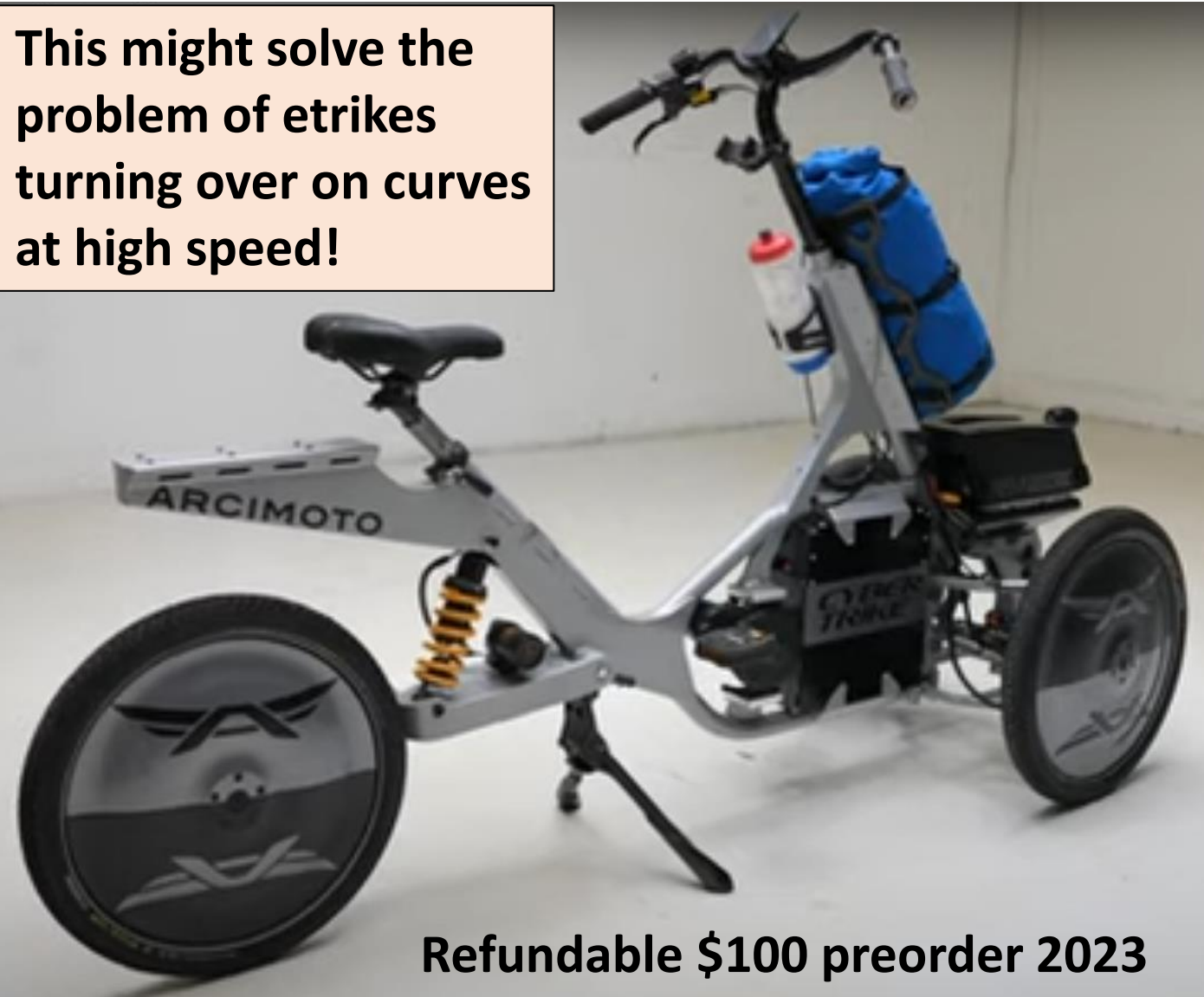


Hummer EV 2 Tesla Model 3s 8 FUVs

100 MLMs

Arcimotor Mean Lean Machine “CyberTrike”

This might solve the problem of e-trikes turning over on curves at high speed!



Refundable \$100 preorder 2023

- Motors in all three wheels.
- No chain, belt or grease.
- **Leans in turns.**
- Pedal generator speed control and **stationary recharge.**
- Also, throttle control.
- Carries 1 or 2 people.
- Up to 200+-miles range with extra batteries.
- Cargo options front & rear.

Mod Bikes Easy Ebike with Sidecar

