



MASSANUTTEN MOUNTAIN TRAILS
100 MILE RUN

Participant's Guide

28th Running • May 17–18, 2025



Revised: December 27, 2024

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Schedule of events

Friday, May 16

2:00 pm	Check in/packet pickup begins. Drop bag collection begins.
4:00 pm	Pre-race briefing.
5:00 to 6:30 pm	Pre-race meal.
8:00 pm	Drop bag collection ends. No more drop bags may be submitted after this time.
8:00 pm	Check in/packet pickup ends.

Saturday, May 17

4:00 am	Late packet pickup. All runners must check in.
5:00 am	Race start.
10:40:45 pm	Sim Jae Duk finishes in 2006 (adjusted for 5:00 am start).
11:00 pm	Finish area kitchen/grill opens.

Sunday, May 18

2:24:30 am	Angela Shartel finishes in 2014 (adjusted).
5:00 am	Last 24 hour finisher.
11:00 am	Last 30 hour finisher.
4:00 pm	Awards Ceremony
5:00 pm	Course closes. Finish area kitchen/grill closes. All drop bags must be picked up. No drop bags will be mailed!
7:00 pm	Camp closes and all must leave. Be sure you have your drop bags and other belongings. You may not stay over Sunday night.

Post-run celebration and awards ceremony

The Awards Ceremony will take place Sunday afternoon, starting at 4:00 pm. We will have food and refreshments at the finish line that will be free to all — runners, volunteers, crews, and pacers.

1 Welcome

Welcome to the 28th running of the Massanutten Mountain Trails 100 mile endurance run (MMT 100), brought to you by the Virginia Happy Trails Running Club (VHTRC). MMT is a well-organized event over the trails of the Massanutten Mountains in the George Washington National Forest in Virginia's scenic Fort Valley. We are confident that if you run MMT, you will agree that *Massanutten ROCKS!*

This *Participant's Guide* is intended to be an aid for both runners and crews, containing information that will be useful to you on race weekend. More extensive information can be found on the MMT Web site at new.vhtrc.org/races/mmt/ but, for the most part, everything you need to know is contained here. We recommend that you print this guide to serve as a resource during race weekend.

2 The camp

The Massanutten Mountain Trails 100 is a loop course, starting and finishing at the [Caroline Furnace Camp and Retreat Center](#). The Camp is the headquarters of the race and all pre-race and post-race activities happen there. The address of the Camp is:

Caroline Furnace Camp and Retreat Center
2239 Camp Roosevelt Road
Fort Valley, VA 22652

[Google Maps directions](#)

Figure 1 shows a schematic map of the Camp. Race Headquarters is in and around the large pavilion, indicated schematically by the tent. The main lower parking lot and camping areas are in a field immediately north (right of) of the start/finish.

Behind and up the hill from the pavilion are the cabins and sukkahs, both available to rent, as well as the bathhouse that is open to all runners for post-race cleanup. These facilities are accessible by walking up the Chapel Trail or Twin Bridge Trail, or by driving around to Moreland Gap Road.

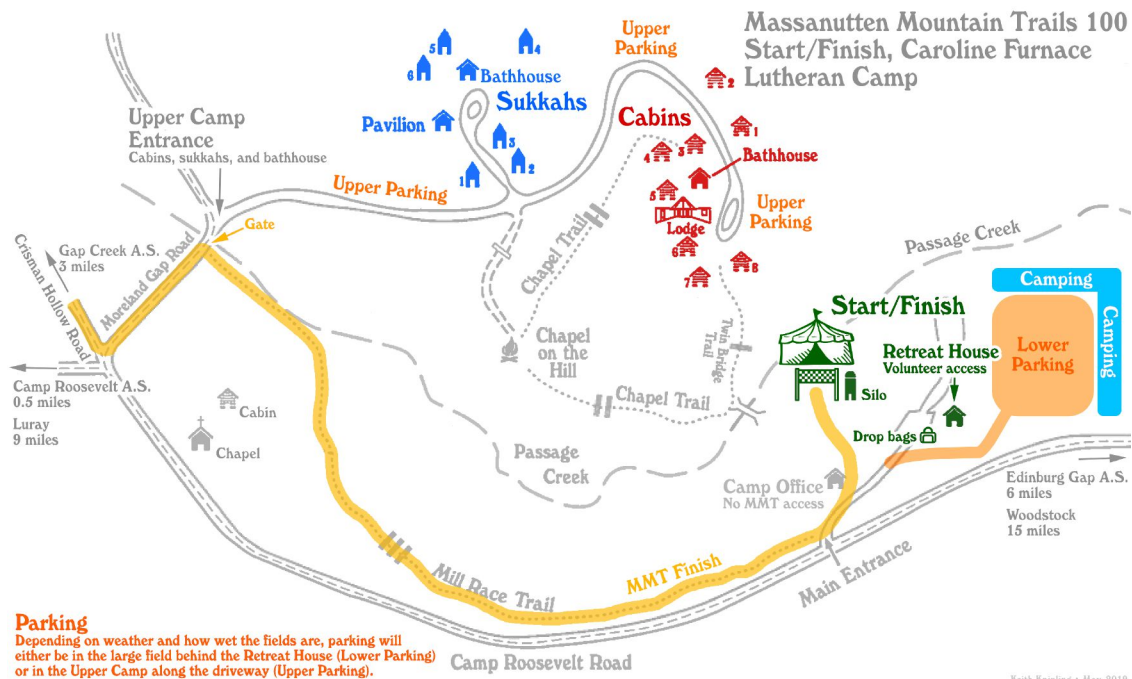


Figure 1: Schematic map of the Caroline Furnace Lutheran Camp, facing west. The start/finish area is shown in green, the centerpiece of which is the large covered pavilion. Rental cabins (in red) and rental sukkahs (in blue) are up the hill from the start/finish. The main parking (orange) and camping (teal) areas are in the field off to the right (north) of the start/finish. Shown in yellow is the final 0.8 miles of the course to the finish.

Rental cabins and sukkahs and bathhouse

8481 Moreland Gap Road

Fort Valley, VA 22652

[Google Maps directions](#)

An aerial view of the camp is shown in Figure 2. The main start/finish pavilion is covered by the the red roof near the center of the photo and the main parking and camping area is visible off to the right. The paved SR 675 (Camp Roosevelt Road) can be seen along the bottom of the photo and the entrance to the Camp is off to the left. The cabins, sukkahs, and bathhouse are not visible, but they are on the knoll immediately behind the pavilion. The gap in the distance just left of center is Moreland Gap, site of the first aid station, and the ridge to the right of it is Short Mountain, the first trail section of the race. Edinburg Gap, the first “real” aid station, is visible on the far right. The distinct knob to the left is Duncan Knob, beneath which is Gap Creek, the last aid station of the race.



Figure 2: Aerial view of the Caroline Furnace Lutheran Camp, looking west. The pavilion is covered by the red roof near the photo center and the main parking and camping area is visible off to the right.

3 The course

The Massanutten Mountain Trails 100 is run primarily on rocky singletrack trails encircling the historic Fort Valley, Virginia. The course is more than 80% trail, with the remainder a mix of gravel and paved roads. The course has 18,500 feet of ascent/descent and is 100.6 miles long.

3.1 Aid stations

MMT features 15 aid stations, nine of which are crew accessible. Table 1 lists mileages for the aid stations as well as crew and drop bag accessibility.

Massanutten Mountain Trails 100

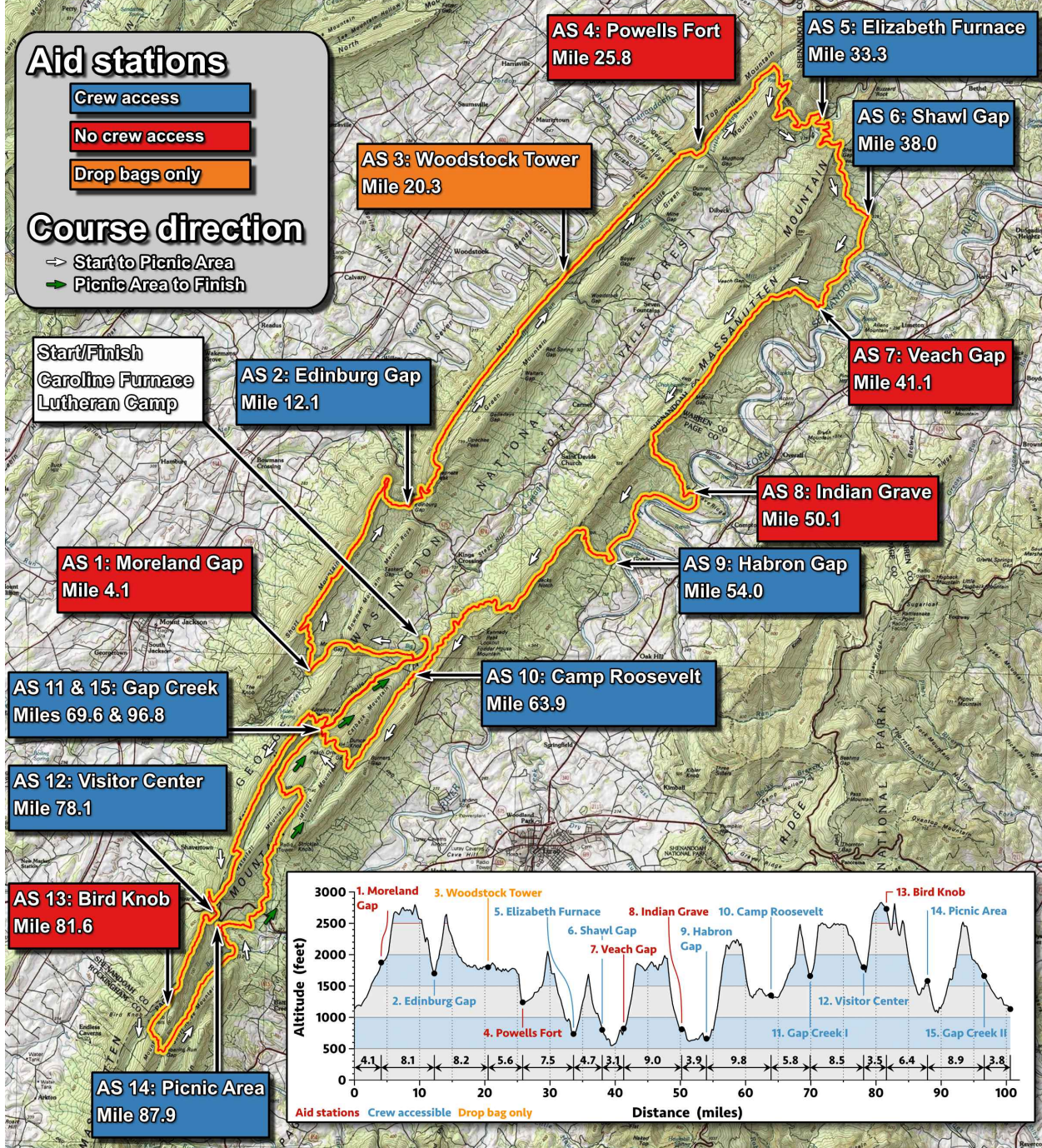


Figure 3: Massanutten Mountain Trails 100 course map.

Table 1: Massanutten Mountain Trails 100 aid stations

	Aid station	Mileage Section	Mileage Cumulative	Open	Cutoff	Crew access	Drop bags	Notes
Start	Caroline Furnace Camp	0	0	5:00	—			
AS 1	Moreland Gap	4.1	4.1	5:20	—			1
AS 2	Edinburg Gap	8.1	12.1	6:40	8:50	✓	✓	
AS 3	Woodstock Tower	8.2	20.3	8:10	11:30		✓	2,3
AS 4	Powells Fort	5.6	25.8	9:00	13:15			2,3
AS 5	Elizabeth Furnace	7.5	33.3	10:30	15:40	✓	✓	
AS 6	Shawl Gap	4.7	38.0	11:20	17:25	✓	✓	
AS 7	Veach Gap	3.1	41.1	11:50	18:25			
AS 8	Indian Grave	9.0	50.1	13:00	21:25			2
AS 9	Habron Gap	3.9	54.0	14:00	22:30	✓	✓	
AS 10	Camp Roosevelt	9.8	63.9	15:45	2:50	✓	✓	4,5
AS 11	Gap Creek I	5.8	69.6	16:45	5:25	✓	✓	4,6
AS 12	Visitor Center	8.5	78.1	18:15	9:15	✓	✓	4
AS 13	Bird Knob	3.5	81.6	19:00	—			2,4
AS 14	Picnic Area	6.4	87.9	20:00	12:50	✓	✓	4
AS 15	Gap Creek II	8.9	96.8	21:30	15:50	✓	✓	4,6
Finish	Caroline Furnace Camp	3.8	100.6	22:30	17:00			

¹ Limited aid — just fluids.

² These aid stations are remote and runners may not drop unless they are in serious medical condition.

³ Cutoff is recommendation only and not enforced, but we believe that you will not complete the course if you do not achieve them. If you go on past an optional cutoff, the next aid station may not be in tact.

⁴ Cutoffs are on Sunday.

⁵ Water and toilet facilities available at this aid station. This aid station is within walking distance to the start/finish area.

⁶ Crews must park on east side of road. That's the same side of the road that the aid station is on — the left side of the road as you come from Camp Roosevelt and the right side as you come from US 211.

VHTRC Massanutten Mountain Trails 100

100.6 miles • 18,500 feet of ascent/descent

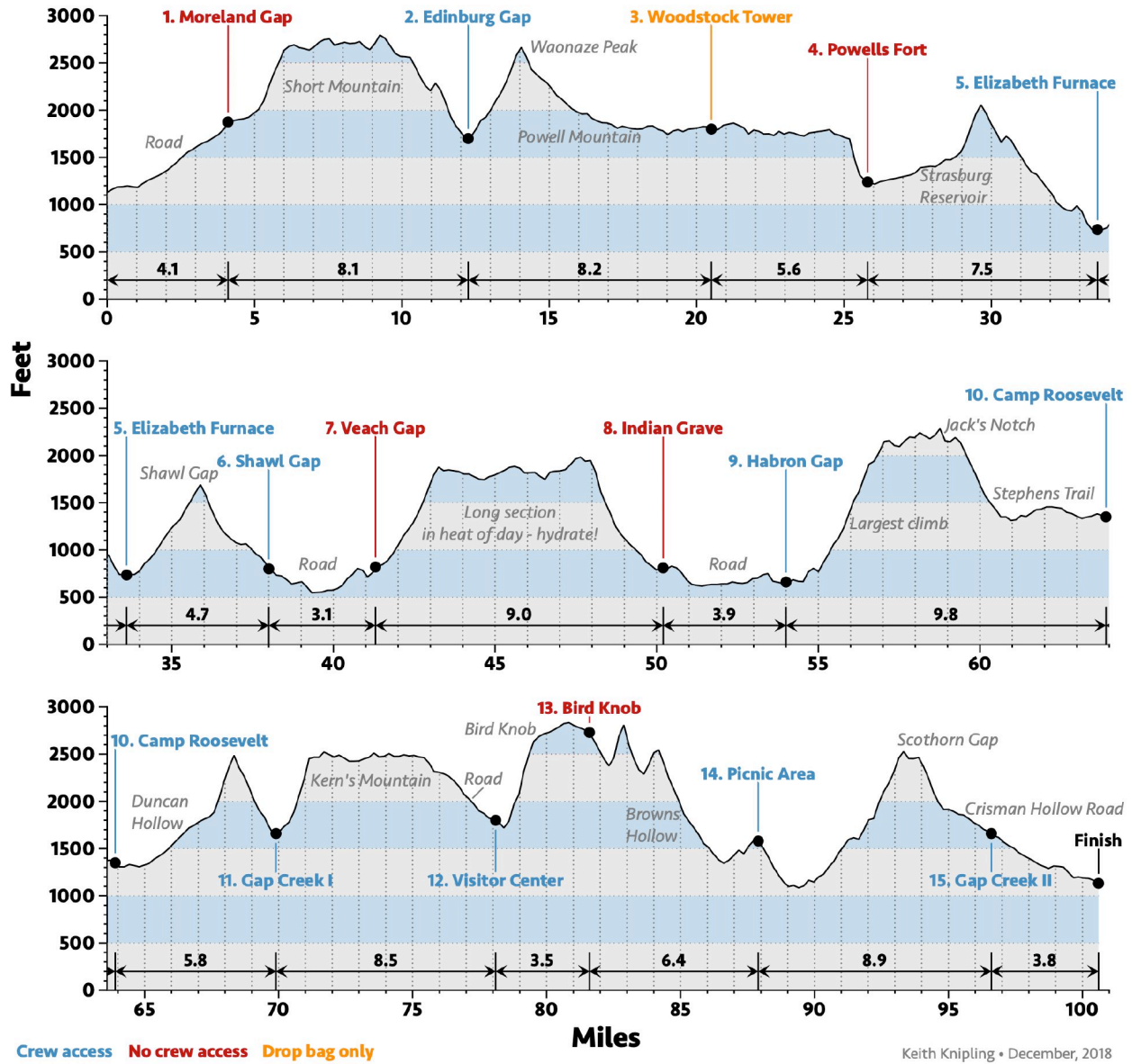


Figure 4: Elevation profile with aid stations. Colors of aid stations indicate crew access: blue for crew access, red for no crew access, orange for drop bags only.

3.2 Elevation profile

Figure 4 shows the elevation profile along with the locations of our 15 aid stations. The 18,500 feet of total ascent is divided among approximately 10 climbs of 750 vertical feet or more. While none of the climbs is terribly long, many are steep and, waiting for you at the top, is a rocky ridgeline. **The course is tougher than it looks on paper.** The high point is 2,835 feet (at Bird Knob, mile 81). The low point is 540 feet (mile 39, between Shawl Gap and Veach Gap). The longest individual climb — 1,550 feet in 2.5 miles — comes at mile 55, just after the Habron Gap Aid Station.

3.3 Course markings

The course will be marked with yellow surveyor’s tape. Red tape will bar entry to trails you shouldn’t take. *Never cross a red ribbon.* There will be reflective markings for the portions of the course traveled at night, and the use of glow sticks at key points. While the VHTRC has a long and well-established reputation for a well-marked course, that doesn’t mean you can’t get lost if you don’t pay attention. Please familiarize yourself with the course ahead of time and run with resources (GPX track, map, turnsheet) to prepare for any unforeseen marking issues.

3.4 Weather

While the May date usually avoids Virginia’s brutal summer weather, we have had hot years (with corresponding low finishing rates, see Figure 5). Other years have been cool, with highs failing to get above 60 °F. Usually daytime highs are in the 70s and the coldest parts of the course dip into the 40s. Temperatures rarely get below freezing but on the ridges it can get chilly, especially for slow-moving runners late in the race. It often rains at some point during the weekend, with some years having torrential and violent storms.

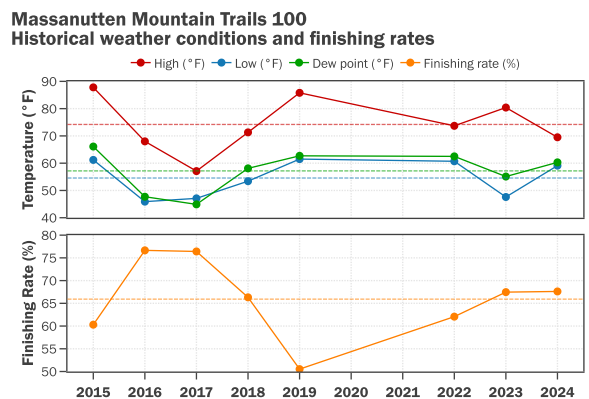


Figure 5: Weather data and finishing rates.

3.5 Historical finishing data

We now have enough data on the “new” MMT course (which was shortened in 2019) to provide reasonably accurate splits for each aid station. These data are displayed in Table 2 and Figure 6, displaying aid station splits for a variety of finishing times. Data are taken from a 30-minute window (± 15 minutes) from each finishing time — *i.e.*, a 30 hour finish represents 29:45 to 30:15. This approach aims to provide “average data” from which to provide reasonable splits.

A few caveats are in order. First, some of the splits considered (roughly half) for each column in Table 2 or curve in Figure 6 are by, definition, “late” for the finish time indicated. If a runner follows the indicated splits to a tee they may not finish before the end of the hour. Likewise, some of these splits may be more ambitious than necessary. Take this data with a healthy grain of salt.

Second, some of the data are quite sparse. We only have data from four years on the present course (2019 and 2022–2024), representing 444 total performances. But divvying these up, especially near the tails of the finishing distribution (*i.e.*, the very front and very back of the pack), means that some of the averages are only based on a few data points. Table 2 indicates how many data points from which the split is calculated. Furthermore, it was not until 2024 that splits were recorded at every aid station, making data for some of the aid stations (Edinburg Gap, Powells Fort, Indian Grave, and Bird Knob) particularly scant. This is why data for an 18 hour finish is missing so much data in Table 2 — no one ran that fast in 2024.

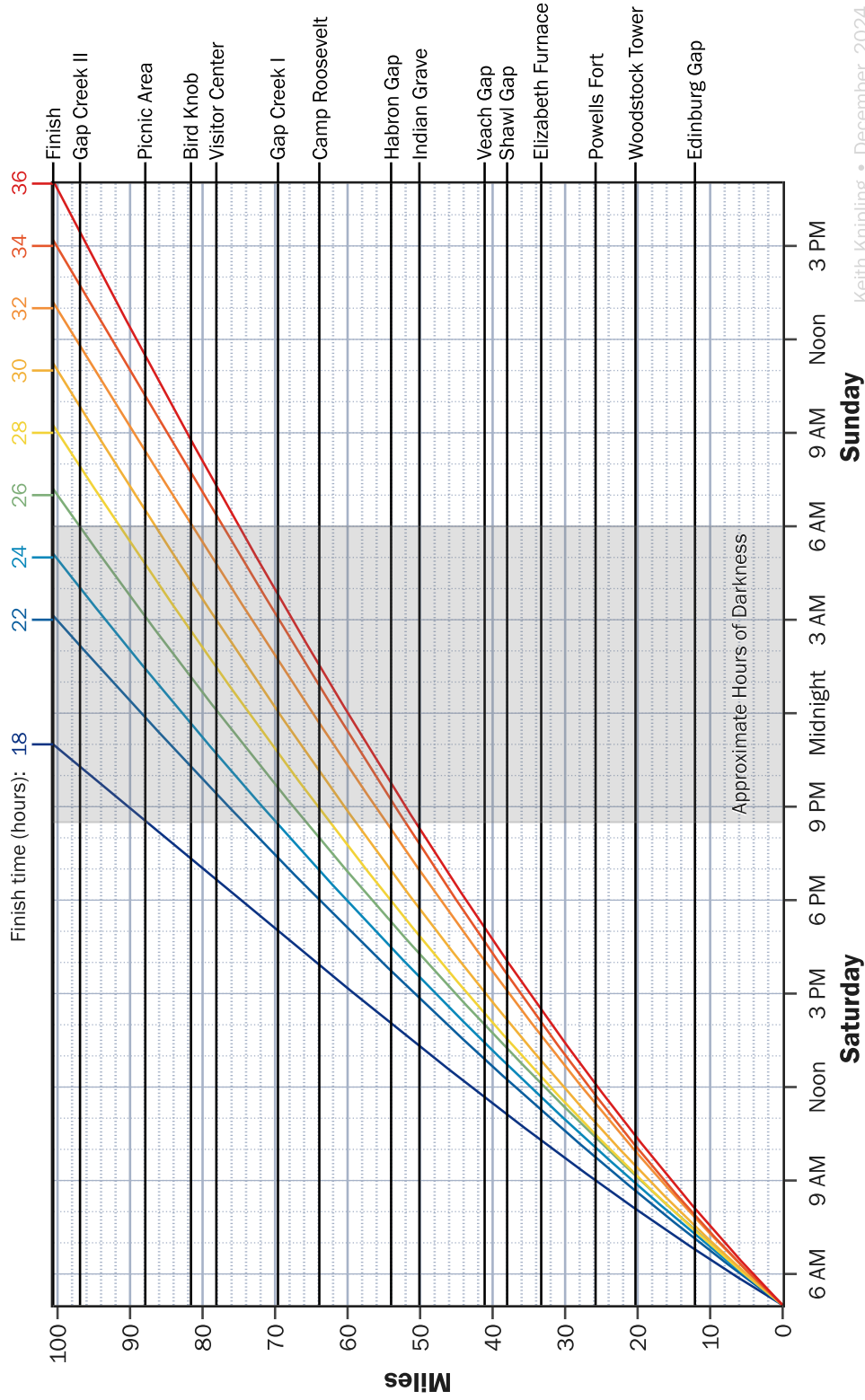
Finally, the curves in Figure 6 are cubic polynomial fits to the average splits in Table 2. There is no physical significance to this type of fit and it also weighs equally each aid station segment of the race, tacitly assuming that all segments are of similar difficulty and speed. Figure 6 provides a helpful visual time-predictive guide but should not be taken to be strictly accurate for each aid station. Splits that any runner will run are likely not as smooth.

The predictive tools in Table 2 and Figure 6 will get better as we collect more data over more years but we feel that they are now good enough to be useful.

Table 2: Average aid station splits for finishing times of 18, 22, 24, 26, 28, 30, 32, 34, and 36 hours.

	18 h	22 h	24 h	26 h	28 h	30 h	32 h	34 h	36 h
Edinburg Gap 12.1 miles		7:02 AM (1 runner)	7:20 AM (1 runner)	7:23 AM (4 runners)	7:20 AM (1 runner)	7:37 AM (3 runners)	7:46 AM (7 runners)	7:50 AM (13 runners)	
Woodstock Tower 20.3 miles	8:11 AM (1 runner)	8:49 AM (1 runner)	9:03 AM (7 runners)	9:17 AM (8 runners)	9:21 AM (10 runners)	9:45 AM (10 runners)	10:18 AM (12 runners)	10:31 AM (18 runners)	10:48 AM (2 runners)
Powells Fort 25.8 miles		9:52 AM (1 runner)	10:02 AM (4 runners)	10:32 AM (5 runners)	10:44 AM (6 runners)	10:58 AM (6 runners)	11:33 AM (3 runners)	12:03 PM (11 runners)	12:10 PM (1 runner)
Elizabeth Furnace 33.3 miles	10:22 AM (2 runners)	11:05 AM (5 runners)	11:42 AM (9 runners)	11:58 AM (12 runners)	12:15 PM (12 runners)	12:47 PM (14 runners)	1:38 PM (21 runners)	1:56 PM (40 runners)	2:30 PM (2 runners)
Shawl Gap 38.0 miles	11:07 AM (1 runner)	12:26 PM (1 runner)	12:51 PM (7 runners)	1:22 PM (8 runners)	1:37 PM (10 runners)	2:20 PM (10 runners)	3:22 PM (12 runners)	3:49 PM (18 runners)	4:14 PM (2 runners)
Veach Gap 41.1 miles	11:37 AM (1 runner)	12:59 PM (1 runner)	1:28 PM (7 runners)	2:04 PM (8 runners)	2:21 PM (10 runners)	3:08 PM (10 runners)	4:11 PM (12 runners)	4:42 PM (18 runners)	5:08 PM (2 runners)
Indian Grave 50.1 miles		2:55 PM (1 runner)	3:20 PM (4 runners)	4:22 PM (5 runners)	4:59 PM (6 runners)	5:30 PM (6 runners)	6:30 PM (3 runners)	7:39 PM (11 runners)	7:50 PM (1 runner)
Habron Gap 54.0 miles	1:52 PM (2 runners)	3:18 PM (5 runners)	4:18 PM (9 runners)	4:56 PM (12 runners)	5:39 PM (12 runners)	6:29 PM (14 runners)	7:47 PM (21 runners)	8:23 PM (40 runners)	9:22 PM (2 runners)
Camp Roosevelt 63.9 miles	3:55 PM (1 runner)	5:52 PM (1 runner)	6:50 PM (7 runners)	7:50 PM (8 runners)	8:32 PM (10 runners)	9:53 PM (10 runners)	11:27 PM (12 runners)	12:41 AM (18 runners)	1:23 AM (2 runners)
Gap Creek I 69.6 miles	4:58 PM (2 runners)	7:13 PM (5 runners)	8:25 PM (9 runners)	9:21 PM (12 runners)	10:28 PM (12 runners)	11:51 PM (14 runners)	1:33 AM (21 runners)	2:55 AM (40 runners)	3:51 AM (2 runners)
Visitor Center 78.1 miles	6:49 PM (1 runner)	9:31 PM (1 runner)	10:50 PM (7 runners)	12:16 AM (8 runners)	1:27 AM (10 runners)	3:14 AM (10 runners)	5:14 AM (12 runners)	6:40 AM (18 runners)	7:31 AM (2 runners)
Bird Knob 81.6 miles		10:36 PM (1 runner)	11:39 PM (4 runners)	1:28 AM (5 runners)	3:11 AM (6 runners)	4:36 AM (6 runners)	6:17 AM (3 runners)	8:15 AM (10 runners)	9:01 AM (1 runner)
Picnic Area 87.9 miles	8:35 PM (2 runners)	11:56 PM (5 runners)	1:44 AM (9 runners)	3:10 AM (12 runners)	5:07 AM (12 runners)	6:54 AM (14 runners)	8:49 AM (21 runners)	10:29 AM (40 runners)	11:40 AM (2 runners)
Gap Creek II 96.9 miles		2:19 AM (1 runner)	4:07 AM (4 runners)	6:14 AM (5 runners)	8:10 AM (6 runners)	9:55 AM (6 runners)	11:46 AM (3 runners)	1:43 PM (11 runners)	3:36 PM (1 runner)
Finish 100.6 miles	10:56 PM (2 runners)	2:59 AM (5 runners)	4:58 AM (9 runners)	7:02 AM (12 runners)	8:58 AM (12 runners)	11:01 AM (14 runners)	1:01 PM (21 runners)	2:58 PM (40 runners)	4:46 PM (2 runners)

Massanutten Mountain Trails Projected Splits Based on data from 2019 and 2022-2024



Keith Knippling • December, 2024

Figure 6: Approximated split times based on previous years' data. These curves are cubic polynomial fits to the data in Table 2. See the caveats on page 9.

3.6 Detailed course description

Start to Aid Station 1 • 4.1 miles • 4.1 miles cumulative From the start, leave the camp and go right 0.8 miles on SR 675 (Camp Roosevelt Road). Then make a right on SR 730 (Moreland Gap Road) and go up 3.2 miles to **Aid Station 1, Moreland Gap**.

Aid Station 1 to Aid Station 2 • 8.1 miles • 12.1 miles cumulative Leave Aid Station 1, Moreland Gap, for 1.0 miles on orange-blazed Massanutten Trail. After a mile, cross FDR 374 and continue to orange across Short Mountain for 6.7 miles. Join FDR 374, turn left, and continue down the orange-blazed dirt road for 0.4 miles to **Aid Station 2, Edinburg Gap**.

Aid Station 2 to Aid Station 3 • 8.2 miles • 20.3 miles cumulative Cross SR 675 then stay to the left (do *not* take the ATV road) and follow orange-blazed Massanutten Trail for 8.2 miles to **Aid Station 3, Woodstock Tower**.

Aid Station 3 to Aid Station 4 • 5.6 miles • 25.8 miles cumulative Continue on orange-blazed Massanutten Trail after Aid Station 3 for 4.6 miles. Stay right on orange at a junction with a blue-blazed trail. Continue downhill for 0.5 miles, turning left on orange-blazed dirt road for 0.5 miles and veer left from road to **Aid Station 4, Powells Fort Camp**.



Were it not for the orange blaze marking the Massanutten Trail, one might mistake it for a pile of rocks in the woods. Not all of the trail is like this, but enough of it is.

Aid Station 4 to Aid Station 5 • 7.5 miles • 33.3 miles cumulative Return from aid station and turn left to continue on orange-blazed dirt road for 1.9 miles. Turn left on orange-blazed Massanutten Trail, skirting the Strasburg Reservoir, for 0.9 miles to a gravel road and a junction with blue-blazed Tuscarora Trail. Turn right on Tuscarora Trail and go uphill for 0.8 miles to a ridge, then downhill on blue for 3.9 miles to SR 678 (Fort Valley Road). (Stay on blue — it will merge with the orange-blazed Massanutten Trail near the end of this stretch.) Cross SR 678, turn right at the parking lot, proceed on road across a bridge and, just short of another large parking lot, turn left into a field on the blue/orange trail to a large wooden shelter and **Aid Station 5, Elizabeth Furnace**.

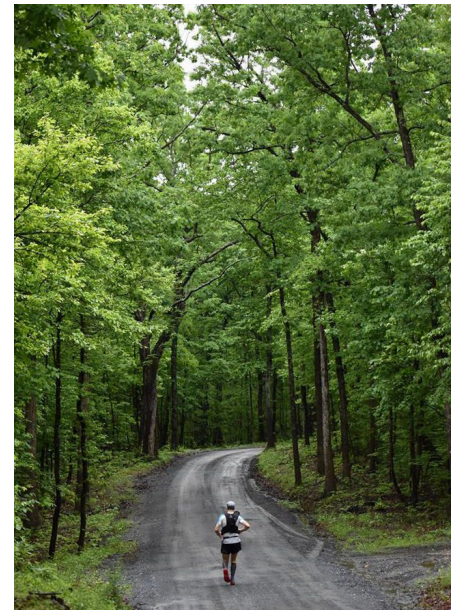
Aid Station 5 to Aid Station 6 • 4.7 miles • 38.0 miles cumulative Continue on blue/orange-blazed trail up 2.3 miles to Shawl Gap, with orange, yellow, and blue blazes at the gap. Continue straight across the saddle and change from blue/orange to a yellow-blazed double-track trail and run downhill. Turn right in 0.5 miles on yellow-blazed Shawl Gap Trail and continue 1.9 miles to **Aid Station 6, Shawl Gap**.

Aid Station 6 to Aid Station 7 • 3.1 miles • 41.1 miles cumulative Go down the drive from Aid Station 6 and turn right on SR 613 (Panhandle Road) and run 3.1 miles. Turn right from road at the trailhead for blue-blazed Tuscarora Trail to reach **Aid Station 7, Veach Gap**.

Aid Station 7 to Aid Station 8 • 9.0 miles • 50.1 miles cumulative Take blue-blazed Tuscarora Trail for 1.7 miles up to the ridge. Turn left on orange-blazed Massanutten Trail and run 4.8 miles to junction with purple-blazed Indian Grave Trail. Turn left on purple and run 2.5 miles down to the trailhead parking at **Aid Station 8, Indian Grave**.

Aid Station 8 to Aid Station 9 • 3.9 miles • 54.0 miles cumulative Turn right on SR 717 (Page Valley Road) and run 2.9 miles to SR 684 (South Page Valley Road). Bear right at junction, then 1.0 mile on dirt road to **Aid Station 9, Habron Gap**.

Aid Station 9 to Aid Station 10 • 9.9 miles • 63.9 miles cumulative Leave the aid station on blue-blazed Habron Gap Trail, and climb for 2.1 miles. Make a hard left at the ridge onto orange-



Not *all* of MMT is rocky. A runner cruises down SR 613 between Shawl and Veach Gaps.

blazed Massanutten Trail. Run 2.7 miles to junction with yellow-blazed Stephens Trail. Turn right on yellow for 4.7 miles to SR 675 (Camp Roosevelt Road). Right down road for 0.25 miles to **Aid Station 10, Camp Roosevelt**.

Aid Station 10 to Aid Station 11 • 5.7 miles • 69.6 miles cumulative Cross SR 675 and run a short trail section that merges into the orange-blazed Massanutten Trail. Right on orange for 3.3 miles through Duncan Hollow to junction with blue-blazed Gap Creek Trail. Turn right on blue, uphill 0.8 miles through Peach Orchard Gap, and then 1.5 miles downhill to **Aid Station 11, Gap Creek I**.

Aid Station 11 to Aid Station 12 • 8.5 miles • 78.1 miles cumulative Short right on FDR 274 (Crisman Hollow Road) then left at a gate and the blue-blazed Jawbone Gap Trail. 1.3 miles up to ridge saddle and intersection with orange-blazed Massanutten Trail. Take a left on orange and run along rocky crest of Kerns Mountain for a long 4.8 miles. There is a nice view to the west, *Q's View*, 1.1 miles before the end of this section at Crisman Hollow Road (FDR 274). Turn right on dirt road for 0.7 miles and then continue straight for 1.7 miles on asphalt, cross US 211 (carefully!), and turn left for short stretch to **Aid Station 12, Visitor Center**.

Aid Station 12 to Aid Station 13 • 3.5 miles • 81.6 miles cumulative From the Visitor Center take white-blazed Wildflower Trail for 0.3 miles. At trail junction, make a right on orange-blazed



The view of the Shenandoah Valley from Bird Knob is one of the best on the MMT course. Unfortunately, most runners go through here at night.

Massanutten South Trail for the climb up Bird Knob. Stay on orange for a total of 3.1 miles. Be alert for a left turn (at a wooden post, 1.85 miles from turn off Wildflower) to stay on orange (do not follow white-blazed Bird Knob Trail), then continue to end of this double track “Ant Road” section to a gate and **Aid Station 13, Bird Knob**.


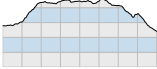
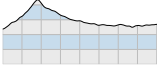
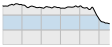
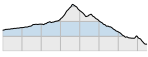


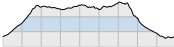

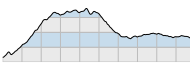
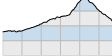
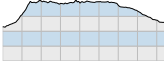

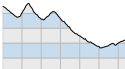
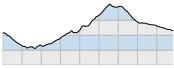

Aid Station 13 to Aid Station 14 • 6.4 miles • 87.9 miles cumulative Leave the Bird Knob Aid Station down the dirt orange-blazed Big Mountain Road for 0.85 miles. At the top of the first small climb, look for wooden post at trailhead on left and turn left onto purple-blazed Roaring Run Trail. Follow purple for 1.0 mile up and then down to the junction with pink-blazed Browns Hollow Run Trail. Take a left on pink and continue 4.4 miles to **Aid Station 14, the Picnic Area**.

Aid Station 14 to 211 East • 1.7 miles • 89.6 miles cumulative Leave aid station pavilion on a short trail section to rejoin the orange-blazed Massanutten South Trail. Left on orange for 1.7 miles to a parking lot on US 211 (**211 East**), where you can meet your crew but is not an aid station.

211 East to Aid Station 15 • 6.9 miles • 96.8 miles cumulative Carefully cross US Rt 211, pass through a gate, and enter white-blazed Massanutten Connector Trail. Follow dirt road for 1.1 miles, then take a left on singletrack trail for 0.7 miles (still blazed white). At trail junction, go right on orange-blazed Massanutten Trail for 2.0 miles (mostly uphill) to four-way trail intersection. Make a left onto yellow-blazed Scothorn Gap Trail and go 1.4 miles to Scothorn Gap Trailhead. Take a right on un-blazed Crisman Hollow Road (FDR 274) for 1.7 miles to **Aid Station 15, Gap Creek II**. This is the same location as Aid Station 11, but you enter from a different direction. You must enter this aid station! **Do not bypass the aid station** by staying on Crisman Hollow Road.

Aid Station 15 to Finish • 3.8 miles • 100.6 miles cumulative Leave aid station and go right to continue on Crisman Hollow Road (FDR 274) for 3.0 miles to the intersection of SR 675 and SR 730. Turn left and follow SR 730 for 0.1 miles to a gate. Take a right at the gate, enter the Caroline Furnace Lutheran Camp property and follow the level Mill Race Trail 0.7 miles to the finish.

Table 3: Massanutten Mountain Trails 100 broken up by section

Section	Distance <i>Surface</i>	Elevation Gain/Loss	Elevation Profile
Start to AS 1 Moreland Gap (Mile 4.1)	4.1 miles <i>Paved/gravel road</i>	780/30 feet	
AS 1 Moreland Gap to AS 2 Edinburg Gap (Mile 12.1)	8.1 miles <i>Rocky trail</i>	1350/1550 feet	
AS 2 Edinburg Gap to AS 3 Woodstock Tower (Mile 20.3)	8.2 miles <i>Rocky trail</i>	1400/1275 feet	
AS 3 Woodstock Tower to AS 4 Powell's Fort (Mile 25.8)	5.6 miles <i>Trail</i>	550/1170 feet	
AS 4 Powell's Fort to AS 5 Elizabeth Furnace (Mile 33.3)	7.5 miles <i>Gravel road & trail</i>	1140/1600 feet	
AS 5 Elizabeth Furnace to AS 6 Shawl Gap (Mile 38.0)	4.7 miles <i>Trail</i>	1050/1050 feet	
AS 6 Shawl Gap to AS 7 Veach Gap (Mile 41.1)	3.1 miles <i>Gravel/paved road</i>	460/370 feet	
AS 7 Veach to AS 8 Indian Grave Ridge (Mile 4.1)	9.0 miles <i>Trail</i>	1830/1820 feet	
AS 8 Indian Grave Ridge to AS 9 Habron Gap (Mile 50.1)	3.9 miles <i>Gravel road</i>	230/400 feet	
AS 9 Habron Gap to AS 10 Camp Roosevelt (Mile 63.9)	9.8 miles <i>Trail</i>	2450/1800 feet	
AS 10 Camp Roosevelt to AS 11 Gap Creek I (Mile 69.6)	5.8 miles <i>Rocky trail</i>	1350/1000 feet	
AS 11 Gap Creek I to AS 12 Visitor Center (Mile 78.1)	8.5 miles <i>Rocky trail & road</i>	1480/1340 feet	
AS 12 Visitor Center to AS 13 Bird Knob (Mile 81.6)	3.5 miles <i>Rocky trail & old road</i>	1140/200 feet	
AS 13 Bird Knob to AS 14 Picnic Area (Mile 87.9)	6.4 miles <i>Trail</i>	1100/2260 feet	
AS 14 Picnic Area to AS 15 Gap Creek II (Mile 96.8)	8.9 miles <i>Trail</i>	1800/1720 feet	
AS 15 Gap Creek II to Finish (Mile 100.6)	3.8 miles <i>Gravel road</i>	390/915 feet	

4 Information for runners

Many runners complete the course using only the aid stations and drop bags. You don't need a crew or pacer, but you are welcome to have either.

4.1 Drop bags

We will take your drop bag to each aid station that provides for them (see Table 1). We don't have many rules on drop bags, but here are some guidelines that will help us get your bags to you:

1. Pack and mark your bags before you come to the event. Preparing your bags is not an insignificant task.
2. Do not use gym bags, airline bags, luggage, backpacks, or bags made of leather or heavy rubber. These are too bulky and don't pack well. The best bag to use is plastic — similar to what you would get in the shoe store or at most packet pick-ups. Plastic bags work fine. The only kind that seem to break are the very thin kitchen garbage bags. Please squeeze all air out of your bags so that they are as small as possible.
3. Mark your bags with the runner's name, bib number, and the name of the aid station on each bag. Do not put the aid station number on your bag. Don't put "AS #12." Put "Visitor Center."¹
4. Be sure that the markings on your bag are clear and indelible. A good system is to use duct tape and a marking pen. Writing directly on a plastic bag may smudge. We read the names on the bags to sort them at the aid station. The names are not just there in case the bag is lost. Make your name legible and permanent, please!
5. Put anything you want to remain dry in a second, sealed food bag. We will try to keep your bags dry, but we may not be successful. At some aid stations, dry space is scarce.
6. Drop bags get lost. Don't put anything in them that is irreplaceable. We assume no responsibility for your property.
7. We try to treat your drop bags with care, but we cannot treat them as fragile. Don't put glass or other breakables in your drop bags.

¹Aid station numbers create confusion on drop bags. If the runner with bib number 12 has gone through the Visitor Center aid station, any bag with a 12 on it may be sent back to the Lutheran Camp even if its owner has not yet arrived at the aid station.



Figure 7: Sample drop bag marking. Permanent marker on duct tape works well. Include runner's name, bib number, and *aid station name*.

4.1.1 When are drop bags due?

Drop bags are due at 8:00 p.m., following the pre-race briefing at the start/finish area on Friday. (See the schedule of events on page 1.)

4.1.2 Getting your drop bags back

We will bring your drop bags back to the finish at the Lutheran Camp. The schedule for getting the drop bags back, however, is complicated and varies by aid station. If you finish towards the back of the pack your bags should be waiting for you at the finish line. If you finish near the front, or if you drop out, some of your bags will not be at the finish line when you arrive.

Please pick up your drop bags or make arrangements for someone to do it for you. It is a major hassle for us each year to deal with drop bags that are left behind. If you finish early or drop out and don't want to stick around at the finish, please find someone to pick up your bags for you. **We will not mail drop bags after the event.**

4.1.3 Headlamps and flashlights

The race starts at 5:00 am — **it will be dark**. You may wish to take a light, which can be left at Aid Station 2 (Edinburg Gap, mi 11.7). If you don't have a crew, having a drop bag at Edinburg in which to leave a light would be a good idea. Alternatively, skip the Edinburg drop bag and start with a small light that you don't mind carrying for a while. Most of the opening section is road and



Drop bags must be pliable and fit within a 16 x 10 x 6 inch box.

a small light is generally sufficient. In fact, it may be light by the time you reach Moreland Gap (4.1 miles) and begin your first trail section.

You will need a light later in the run. Figures 6 and 8 can help estimate when it will get dark for you.

4.1.4 GPS tracker

All runners are required to carry a GPS tracker provided by the event. Runners must return the tracker to a race official upon completing the race or if they withdraw from the race. The GPS tracking information will not be utilized for official timekeeping purposes. The purpose of the tracker is to ensure the safety of runners on the course and to allow visibility (some areas of the course are not covered by the tracker due to lack of cell signal) to the runner's location for their crew, family, and other relevant parties.

4.2 Crews

Runners are welcome to have a crew support them at MMT. There are two things you should know about crews. First, it's not a trivial request to ask someone to crew for you. Crewing at MMT is not easy. The roads are dark, poorly marked, and lonely. There are long waiting times in between runner sightings. Secondly, crews cause major parking, congestion, and administrative problems for our aid stations. Crews must abide by the rules for crews found on page 32.

4.3 Pacers

Whether you have a pacer at MMT is optional. Many people have finished the course without a pacer; many have used one. The course record was set without one. A runner and his/her pacer are expected to follow these rules:

1. A pacer may join a runner at any time at the Camp Roosevelt aid station (63.9 miles) or any aid station beyond that point where crew access is allowed. After 6:00 p.m. on Saturday, a pacer may join a runner at the Habron Gap aid station (54.0 miles).
2. Pacers may only join a runner at an aid station.
3. A runner may only have one pacer at a time.
4. The pacer and runner must always remain together. That is, the pacer cannot come into an aid station ahead of the runner to fill up water bottles and grab food, etc. to save the runner time at the station.
5. The pacer is a companion, not a leader. That is, (and we know this one is hard to enforce, so we hope that you do the honorable thing) the runner is supposed to "lead" and find and follow the course on his/her own. The pacer should always follow the runner.
6. Most food at the aid stations will be available to pacers, although some items may be reserved just for registered runners.
7. The pacer is not a "mule." That is, the pacer is not supposed to carry the runner's water bottles, etc.
8. We do not have means to give transportation to pacers or drive their cars anywhere.

4.4 Solo Division

The Solo Division is our recognition of the solo runner, who does not use a crew or pacer. An award will go to the male and female winners of the division, and all finishers in the division will receive a token of their achievement in addition to their finisher's buckle.

Solo Division runners are expected to follow these rules:

1. Entrants declare their intent to enter the Solo Division at check-in on Friday before the race. Even if you had previously entered in the Solo Division during registration, **every runner must reaffirm their intent to run in the Solo Division at check-in on Friday.**
2. Entrants in this division will have no crews and no pacers and will not use the crews or pacers of other entrants.
3. Entrants will rely only on the official aid stations and their own drop bags for all support — food, fluids, clothing, supplies, etc.
4. Entrants may not take any aid, equipment, or clothing items left specifically for them at an aid station. Generally, everything must come from the aid station supplies or the runner's drop bags. Entrants may, however, take anything from an aid station that is generally available to all runners regardless of who provided it. They may also take unplanned emergency items from other crews not related to them in anyway. Example: a Band-Aid from another runner's crew.
5. Entrants may run with any other MMT entrant or group of entrants, solo or not. Entrants in this division may run with another entrant in the run who has a pacer as long as the division entrant does not take any direct aid from the pacer.
6. Entrants may be helped in the aid station by aid station volunteers the same as other entrants, but are not to be helped by crew.
7. Entrants may get impromptu, unplanned assistance from other runners (but not pacers) while on the course between aid stations (examples: gels, water, salt tablet, Band-Aid, etc.).

If entrants violate these rules, they are not disqualified from the entire race; rather, they can and should continue, but will no longer be recognized as being part of the Solo Division.

4.5 Awards

All finishers will receive an engraved belt buckle — silver for under 24 hours, pewter otherwise. There will be awards for the male and female winners in the categories noted below. The following award categories will be recognized:



1. Overall
2. VHTRC
3. Master (age 40–49)
4. Senior (age 50–59)
5. Super Senior (age 60+)

At least two competitors must start the race in a category for an award to be earned.

Winners and finishers in the Solo Division will receive separate awards and recognition. Special recognition is also given to 5, 10, 15, and 20 year finishers. Buckles and other awards will be given out at the Awards Ceremony on Sunday (see schedule on page 1).

4.6 Tips for a successful race

Refer to the elevation profile in Figure 4 (on page 7) and the course breakdown in Table 3 (on page 16).

- The first third of the race, the 33.3 miles to Elizabeth Furnace, is arguably the most difficult and slow-going. This is the section with the least amount of road (only 6 miles: 4 miles paved and 2 miles dirt) with several long sections of rocky ridge line. Start off easy, embrace the rhythm of the rocks, and save yourself for the next section.
- On paper, the middle section — the 30.6 miles from Elizabeth Furnace to Camp Roosevelt — is the easiest. **This section is the best opportunity to make time** because it is the most runnable, with 8 miles of relatively flat road, and nearly all runners get through it in the daylight. That said, this section is brutal if it is hot. There are two long sections (AS 7 to AS 8 and AS 9 to AS 10) that must be navigated in the heat of the day. Take advantage of the short and flat road sections preceding each of these sections to hydrate and fuel for these subsequent long hauls.

- AS 11 (Gap Creek I, mile 69.6), is a strategic place to change shoes, as the section going into it is one of the wettest on the course: the infamous Duncan Hollow. After Gap Creek I it is possible to keep your feet mostly dry for the remainder of the race.
- The section after Gap Creek I, Kerns Mountain, is probably the rockiest and most technical on the course. It does not help that most runners go through here at night. Once you pass *Q's View* the technical portion of this section is behind you, with almost all downhill trail and road to the next aid station. Get to *Q's View* by sunset if you hope to finish under 24 hours.
- With the exception of the steep climb up Bird Knob, much of the course after Kerns Mountain is runnable on relatively nice trail. Once you are off Kerns Mountain and begin the downhill jog to the Visitor Center, you have 28.6 miles remaining, about 9.7 miles of which is some sort of road. While some significant climbs still remain, the running is pretty nice (by MMT standards). If you save your legs you can make up a lot of time after Kerns Mountain.

5 Information for crews

5.1 Aid stations with crew access

Nine of the 15 aid stations have crew access. They are listed in Table 4 along with coordinates that can be typed into GPS devices or smartphones. Note that cell phone reception can be spotty in and around the Fort Valley; generally, cell phones work if you are on the top of the mountain, but may not if you are in the Valley, depending on your carrier. Figures 6 (page 11) and 8 (page 25) are useful for runners and crews to estimate a runner's arrival time at the various aid stations.

Table 4: Crew-accessible aid stations

	Aid station	Mileage	GPS Coordinates	Cell phone coverage
Start	Caroline Furnace Camp	0	38.7414° N, 78.5130° W Map	
AS 2	Edinburg Gap	12.1	38.7891° N, 78.5199° W Map	✓
AS 5	Elizabeth Furnace	33.3	38.9290° N, 78.3287° W Map	
AS 6	Shawl Gap	38.0	38.8960° N, 78.3045° W Map	✓
AS 9	Habron Gap	54.0	38.7701° N, 78.4230° W Map	✓
AS 10	Camp Roosevelt	63.9	38.7297° N, 78.5175° W Map	
AS 11	Gap Creek I	69.6	38.7079° N, 78.5612° W Map	
AS 12	Visitor Center	78.1	38.6424° N, 78.6112° W Map	✓
AS 14	Picnic Area	87.9	38.6376° N, 78.6089° W Map	✓
	211 East	89.6	38.6413° N, 78.5902° W Map	✓
AS 15	Gap Creek II	96.8	38.7079° N, 78.5612° W Map	
Finish	Caroline Furnace Camp	100.6	38.7414° N, 78.5130° W Map	

Massanutten Mountain Trails 100 Aid Station Arrival Times

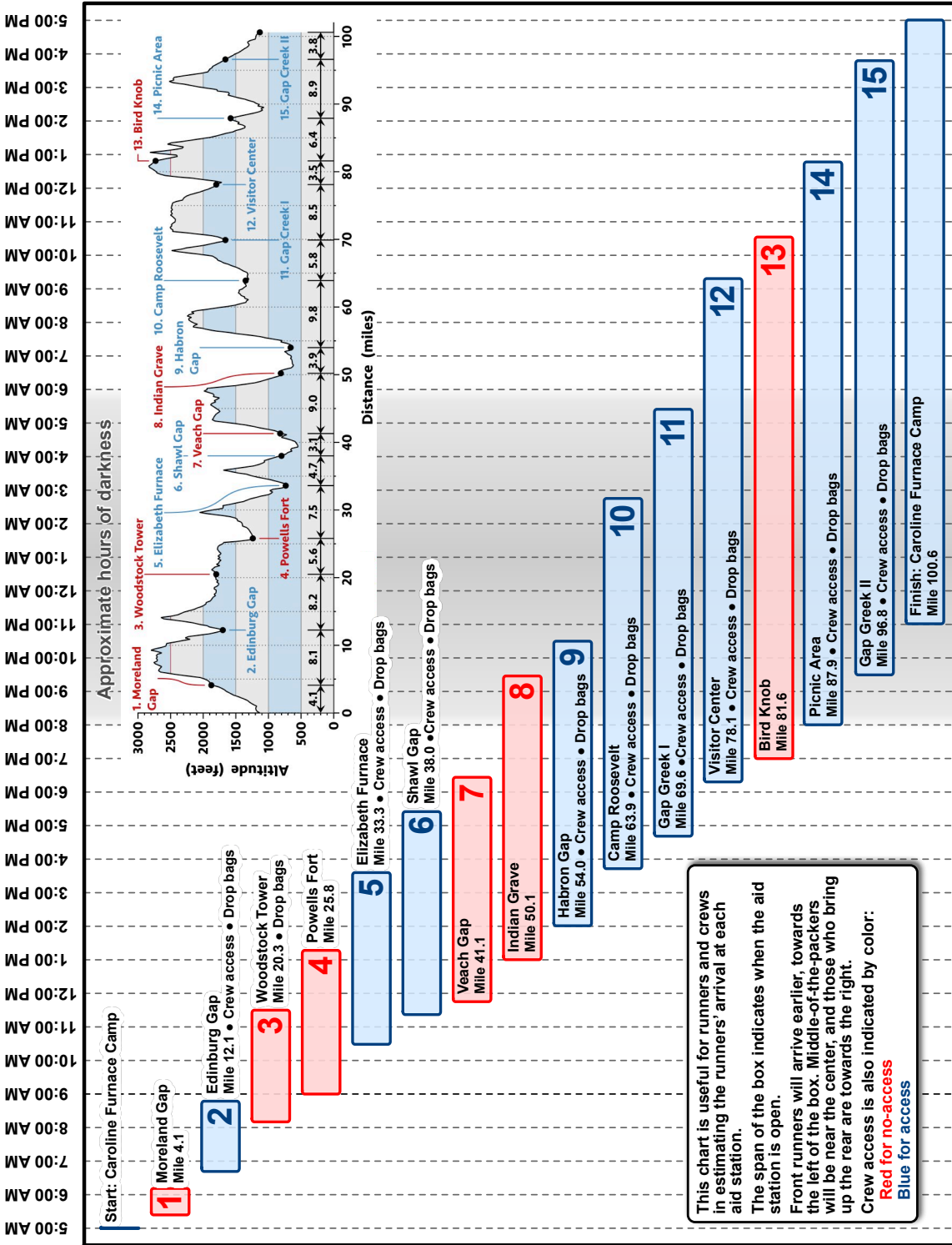


Chart by Keith Knipling, inspired by a similar one by Charlie Crissman for the Cascade Crest 100 Mile Endurance Run

Figure 8: Approximate arrival times at the aid stations. Front-of-the-pack runners will be closer to the left-hand side of the boxes while back-of-the-pack will be towards the right.

5.2 Driving directions to the aid stations

“FR” is Forest Road. “SR” is State Road. Signs generally have numbers only. Name signs are occasionally stolen. It is better to rely on numbers and use names as confirmation. Maps will be valuable in helping you navigate around the course.

Please drive carefully during the MMT 100. Use extra caution when on or near the MMT 100 course (Crisman Hollow Road/FR 274, SR 730, and FR 374). These roads are not designed for speed. Drive slowly — your tires will thank you, and you should have plenty of time.

These instructions assume that you leave the start/finish from the parking area, which we expect to be off the main north-south road in Fort Valley, SR 675.² As you leave the parking area, turning left is heading north, turning right is heading south. If you leave the camp onto the Moreland Gap Road, turn left and go a very short way to a four-way intersection where you meet SR 675. At that point, turning left is going north on SR 675; going straight is going south on SR 675.

Start to Aid Station 2 (Edinburg Gap)

Driving to Edinburg Gap 38.7891° N, 78.5199° W	Driving distance 3.9 miles	Course mileage 12.1 miles
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Driving directions

- Leave Caroline Furnace Lutheran Camp and turn left (north) on SR 675 and follow it to the aid station. Watch for two intersections with SR 678. SR 675 makes a 90° left turn in Kings Crossing about 2.5 miles from the camp. After that turn, 2.0 miles to the top of the hill is where the aid station is. When you get to the gap, turn left and park in the off road vehicle parking lot. (Look for the sign to the *Off Road Vehicle Area*.)

Notes

- The Edinburg Gap Aid Station has a pit toilet, located at the far end of the parking lot.
- There is also a good and reliable spring about half mile east on SR 675. You will pass the pipe at a pull-off on the right before you get to the aid station.

²This road is marked both “Fort Valley Road” and “Camp Roosevelt Road” on maps.

Aid Station 2 (Edinburg Gap) to Aid Station 5 (Elizabeth Furnace)

Driving to Elizabeth Furnace 38.9290° N, 78.3287° W	Driving distance 18.1 miles	Course mileage 33.3 miles
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Driving directions

- Go out of the parking lot to the paved road which is SR 675, and turn right (east).
- Drive 2.0 miles down SR 675 to Kings Crossing. Turn left (north) on SR 678 at Kings Crossing.
- Drive 16.1 miles on SR 678 to the Elizabeth Furnace picnic area, about 0.5 miles past the family campground entrance.

Notes

- The first parking area you come to is very small. Continue through that parking lot, over a small bridge, and into a much bigger lot where you can park. You can meet runners at the aid station that is in a large wooden pavilion in a field adjacent to this lot. Runners will be on the same, narrow bridge that you will use to get to the parking lot. Please drive carefully.
- There are pit toilets at the Elizabeth Furnace parking lot. Also, you may be able to get water at the family campground, if not at the picnic area itself.
- The parking lot at Elizabeth Furnace is quite large. But it may fill up. If it does, there are other parking lots in this area. The best alternative is south of the family campground.

Aid Station 5 (Elizabeth Furnace) to Aid Station 6 (Shawl Gap)

Driving to Shawl Gap 38.8960° N, 78.3045° W	Driving distance 7.2 miles	Course mileage 38.0 miles
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Driving directions

- Turn right (north) from the parking lot onto SR 678.
- Drive 2.7 miles to SR 619 (Mountain Road) and turn right.
- Continue on SR 619 about 3.0 miles to the intersection with SR 613 (Panhandle Road). Turn right on SR 613.
- Go less than 2.0 miles to the Shawl Gap Trail Head.

Notes

- Make sure all four wheels are *off* the road when parking but take care not to park in a ditch!

Aid Station 6 (Shawl Gap) to Aid Station 9 (Habron Gap)

Driving to Habron Gap 38.7701° N, 78.4230° W	Driving distance 39.1 miles	Course mileage 54.0 miles
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Driving directions

- Leave the Shawl Gap aid station and return along SR 613 the way you came. Turn right on SR 608 for 0.4 miles and turn right on SR 619. Continue 5.2 miles on SR 619 towards Front Royal.
- Turn right on US 340 at the traffic signal, just after crossing the Shenandoah River, going south towards Luray.
- Stay on US 340 South for 22.2 miles. At that point, US 340 becomes US 340 Business. You go straight and pass under US 211. Continue on US 340 Business for 0.5 miles until you come to SR 675 (Mechanic Street). Turn right and cross over the bridge on SR 675. (That right turn is the first right after the entrance to the park-and-ride lot and the big, circular sign that welcomes you to Luray.)
- Follow SR 675 for 3.5 miles. Cross the Shenandoah River on Bixler Bridge and turn right on SR 684.
- Follow SR 684 along the river for 7.3 miles to Foster's Landing on the right (sign at entrance says *Public Boat Landing*).

Notes

- SR 684 will become a dirt road about 0.75 miles before you reach Foster's Landing.
- Do not park on the road. Park in the lot on the right, through the aid station

Aid Station 9 (Habron Gap) to Aid Station 10 (Camp Roosevelt)

Driving to Camp Roosevelt 38.7297° N, 78.5175° W	Driving distance 12 miles	Course mileage 63.9 miles
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Driving directions

- Return on SR 684 for 7.3 miles to Bixler Bridge and continue straight on SR 675 for 0.5 miles. Do *not* go back over the Shenandoah River.
- Turn right, uphill, on SR 675 for 2.7 miles to the overlook. Stop and enjoy the view, and strong cell signal, but be careful when you park and as you leave the overlook.
- Continue downhill for 1.5 miles to Camp Roosevelt. Park and walk to the aid station located in the Camp Roosevelt picnic area.

Notes

- **Pacers may not leave a car at Camp Roosevelt**, but it is a short walk from the Caroline Furnace Camp (the start/finish) where you may leave a car.
- Be sure to follow the directions of Forest Service officials if they are in this area.

Aid Station 10 to Aid Station 11 (Gap Creek)

Driving to Gap Creek 38.7079° N, 78.5612° W	Driving distance 3.2 miles	Course mileage 69.6 miles
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Driving directions

- From Camp Roosevelt, go right (west) on SR 675 and drive 0.2 miles to the four-way intersection of SR 675, SR 730, and FR 274 (Crisman Hollow Road).
- Turn left (south) on FR 274 (Crisman Hollow Road) and drive 3.0 miles to Aid Station 11.

Notes

- **All vehicles must park on the east side of the road** (the left-hand side as you head south).
- This aid station is one of our most congested. Please park properly and be prepared to walk a bit.
- There is no rush — you have plenty of time to meet your runner if you are coming from Camp Roosevelt.

Aid Station 11 to Aid Station 12 (Visitor Center)

Driving to Visitor Center 38.6424° N, 78.6112° W	Driving distance 6.5 miles	Course mileage 78.1 miles
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Driving directions

- Continue on FR 274 for 6.5 miles to US 211.
- Turn left on US 211 and then the Visitor Center is immediately on your right. Parking is tight here, so park where directed by the parking attendants.

Notes

- Unless you are supporting a runner in the front of the pack, there will be runners coming toward you on the road as you leave Gap Creek. You are also likely to pass runners in the last 2.5 mile to US 211. *Drive carefully!*
- You have plenty of time to get to the Visitor Center. Here are options to delay your arrival there:
 - Tourist opportunity — take a walk on the *Massanutten Mountain Story Trail* where the dirt road ends and asphalt begins. The trail is on your left, about 4.7 miles after you leave Gap Creek. The trail is short, educational, and has great views (although it may be dark when you are there)!
 - If you want food or supplies, you will find a big supermarket, fast food restaurants, and other shopping opportunities available outside of Luray, a little over 7.5 miles

east down the hill on Route 211 or about the same distance to the west in New Market.

- Dan's Steakhouse is a convenient place to eat. It is on US 211, just about a mile down the hill from the Visitor Center, on your left. They might give you water if you ask nice!
- Parking is limited at the Visitor Center aid station. Please follow the directions of the parking attendants. You may only park one vehicle at this aid station. You may not be able to park here if there is no room for you. You will be directed to try the Picnic Area parking lot or the 211 East parking area. (See below.)

Aid Station 12 to Aid Station 14 (Picnic Area)

Driving to Picnic Area 38.6376° N, 78.6089° W	Driving distance 0.8 miles	Course mileage 87.9 miles
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Driving directions

- Turn right out of the Visitor Center parking lot, going east down the hill on US 211. You are going a very short distance. The aid station is about 0.8 miles down the road on the right. Look for it when the road bends sharply to the left. The entrance to the aid station comes up fast. Parking is in the large lot across US 211 from the aid station (assuming that the restaurant is still out of business, as it has been for many years).

Aid Station 14 (Picnic Area) to 211 East

Driving to 211 East 38.6413° N, 78.5902° W	Driving distance 2.0 miles	Course mileage 89.6 miles
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Driving directions

- Turn left out of the restaurant parking lot on US 211 and go east about a 2.0 miles down the hill to the 211 East commuter parking lot. There is space for 20 vehicles; otherwise park completely off the road on the grassy areas.

Notes

- This parking area next to 211 East is not an aid station, but crews can meet and pacers can pick up their runners here. This would be a good alternative to meeting at the (sometimes congested) Picnic Area since for the runners it is less than two, relatively easy, miles down the hill from that aid station.

Aid Station 14 (Picnic Area) (or 211 East) to Aid Station 15 (Gap Creek)

Driving to Gap Creek 38.7079° N, 78.5612° W	Driving distance 6.5 miles	Course mileage 96.8 miles
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Driving directions

- Return west on US 211 to the Visitor Center (top of hill) and turn right on FR 274, immediately after the Visitor Center (if you start going downhill, you have missed this turn).
- Take the paved and then dirt FR 274 (Crisman Hollow Road) 6.5 miles to the Gap Creek Trail Head.

Notes

- **All vehicles must park on the east side of the road** (now on the right side as you head north).
- There will be runners on the road for the last mile or so. *Please drive carefully and don't stir up dust in their faces!*

Aid Station 15 to Caroline Furnace

Driving to Caroline Furnace 38.7414° N, 78.5130° W	Driving distance 3.7 miles	Course mileage 100.6 miles
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Driving directions

- Continue north on FR 274 (Crisman Hollow Road) for a little over 3 miles. Pass SR 730 (Moreland Gap Road) and go about 0.7 miles and turn left into the parking area at the Caroline Furnace Lutheran Camp.

Notes

- There will be runners on the road for the 3 or so miles back to the hard surface road. *Please drive carefully and don't stir up dust in their faces!*

5.3 Rules for crews

While crews are welcome at the MMT, they can cause congestion and related problems. Crews must comply with the provisions on this page. Race management reserves the right to take action on violations of these provisions ranging from a warning, to exclusion of the crew from an aid station or all aid stations, and finally to disqualification of the runner whom the crew is supporting.

- Crews are permitted at the aid stations listed in Table 4. Crews and pacers may only meet their runners within 200 feet of a designated aid station. The one exception is the 211 East Parking Area.
- Crews may not meet runners at other places on the course due to limited parking, access, and safety.
- Your crew and pacer may have only one vehicle (**they may not have separate cars**).
- If a pacer needs to leave a car at the south end of the course, he or she may do so at the 211 East parking area or the parking lot across from the Picnic Area. Pacers may not leave a car at Camp Roosevelt, but that aid station is a short walk from the Caroline Furnace Camp where they may leave a car. Pacers' cars may *not* be left at Gap Creek or the Visitor Center, due to the limited parking in the area of those aid stations.
- Crews are required to comply with the parking instructions of aid station personnel. We must restrict parking in many areas for safety reasons and Forest Service requirements.
- Crews may not be allowed in certain portions of the aid station areas. Please note that if an area is cordoned off, you as crew are not allowed into these "runner only" areas.

Violation of these rules can lead to the exclusion of the crew from the aid station or all later aid stations or disqualification of the runner.

5.3.1 Other considerations

Aid stations Aid station food is intended for the runners, not the crews. Please don't take food or drink from the aid stations unless it is offered to you first. Some food might be in short supply, especially sandwiches, hot soup, or other warm food prized by runners. Your cooperation with aid station volunteers is appreciated.

Restrooms Except where noted, there are no restroom facilities or running water on the course or in the aid stations.

Bug repellent Don't forget it. You will be around grass, weeds, and woods both at the aid stations and the start finish. Be particularly careful of ticks.

5.3.2 Pets

Dogs are not allowed at the Caroline Furnace Lutheran Camp (the start/finish). This is a Camp rule. You should not bring a dog anywhere on the property.

Elsewhere on the course, do not bring a dog into any aid station. If you bring a dog, please keep it away from the runners, the aid station itself, and the volunteers in the aid station. If your dog wants to meet its running master along the course, please arrange for it to do so before or after the runner enters the aid station itself. Dogs should always be on a leash.

6 In case of emergency

Runners at the Massanutten Mountain Trails 100 are responsible for their own health and well-being. We do not have “medical checks” or medical professionals at the event. You need to take care of yourself.

The course goes through three Virginia counties. In case of emergency, who to call and where to go will depend on in which county the emergency occurs. See Table 5. The following pages also have driving directions to the nearest hospitals and rescue squads from each of the aid stations.

Table 5: Emergency contact information

Where on the course	County		Contact information
Southern/eastern portions of the course Aid stations: Habron Gap (9), Gap Creek (11/15), Visitor Center (12), Bird Knob (13), Picnic Area (14)	Page	Police	Page County Sheriff (Luray) (540) 743-6571
		Medical	Page Memorial Hospital (540) 743-4561 200 Memorial Drive Luray, VA 22835
Northeast portions of the course Aid stations: Shawl Gap (6), Veach Gap (7), Indian Grave Ridge (8)	Warren	Police	Warren County Sheriff (Front Royal) (540) 635-4128
		Medical	Warren Memorial Hospital (540) 636-0300 351 Valley Health Way Front Royal, VA 22630
Western portions of the course Start/finish Aid stations: Moreland Gap (1), Edinburg Gap (2), Woodstock Tower (3), Powell’s Fort (4), Elizabeth Furnace (5), Camp Roosevelt (10)	Shenandoah	Police	Shenandoah County Sheriff (Woodstock) (540) 459-6100
		Medical	Shenandoah Memorial Hospital (540) 459-1100 759 South Main Street Woodstock, VA 22664
Any emergency in the National Forest should also be reported to the Forest Service			Lee Ranger District, U.S. Forest Service 102 Koontz Street Edinburg, VA 22824 (540) 984-4101

S/F: Caroline Furnace Lutheran Camp

Location

38.7414°N, 78.5130°W

Rescue squad & hospital (9.2 miles, 20 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

200 Memorial Drive
Luray, VA 22835
(540) 743-4561

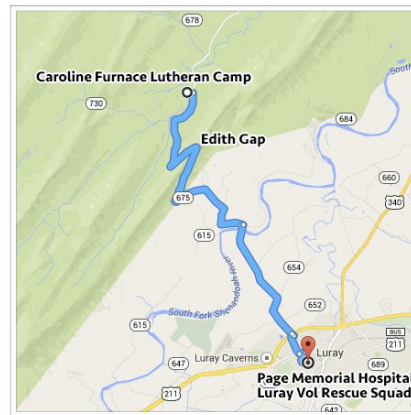
Driving directions

- From the camp, take a right onto State Rte 675 southbound for 0.8 miles.
- At four-way intersection (with Moreland Gap Rd and Crisman Hollow Rd), make a left, continuing on State Rte 675 for 4.5 miles, crossing over the mountain at Edith Gap (Kennedy Peak Trailhead).
- Take a left on Egypt Bend Rd and then after 0.5 miles make a right to stay on State Rte 675 (Bixler's Ferry Rd), crossing over the Shenandoah River.
- In 2.6 miles cross US-211/US-340 and then take a right to stay on Bixler's Ferry Rd.

- In 0.4 miles, turn left onto West Main St.
- Take the first right onto Memorial Dr. Rescue squad is on the left. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Edith Gap (38.7253°N,-78.5095°W)



AS 1: Moreland Gap

Aid station location

38.7290°N, 78.5665°W

Rescue squad & hospital (11.8 miles, 30 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

200 Memorial Drive
Luray, VA 22835
(540) 743-4561

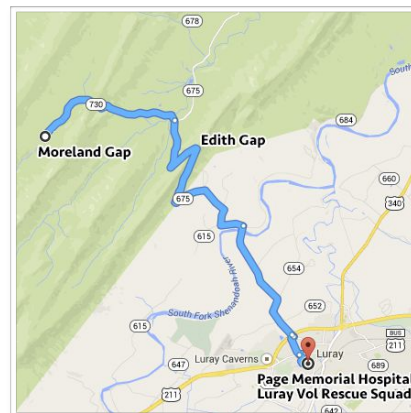
Driving directions

- From the aid station, take State Rte 730 (Moreland Gap Rd) 3.2 miles to four-way intersection (with Moreland Gap Rd and Crisman Hollow Rd).
- Continue straight on State Rte 675, cresting Edith Gap after 1.3 miles. Continue down the other side for 2.8 miles.
- Take a left onto N Egypt Bend Rd and follow for 0.5 miles.
- Take a right at Bixler Bridge, crossing Shenandoah River
- Continue on State Rte 675 (Bixler's Ferry Rd) for 2.6 miles.
- After crossing US-211/US-340, take first right onto Bixler's Ferry Rd and follow for 0.4 miles.
- Turn left onto W Main St and follow for 0.1 miles

- Turn right onto Memorial Dr. Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Moreland Gap is on the western ridge of the Massanutters; you should have reception. If not, head west on State Rte 730 (Moreland Gap Rd) down into the Shenandoah Valley.



AS 2: Edinburg Gap

Aid station location

38.7894°N, 78.5209°W

Rescue squad (7.8 miles, 15 minutes)

Woodstock Rescue Squad

132 W Reservoir Road
Woodstock, VA 22664
(540) 459-4231

Driving directions

- Head west on on State Rte 675 (Edinburg Gap Rd) for 3.9 miles.
- Turn right onto US-11 North (Main St) for 3.7 miles.
- Turn left onto West Reservoir Rd for 0.1 miles. Rescue squad is on the right.

Hospital (8.1 miles, 15 minutes)

Shenandoah Memorial Hospital

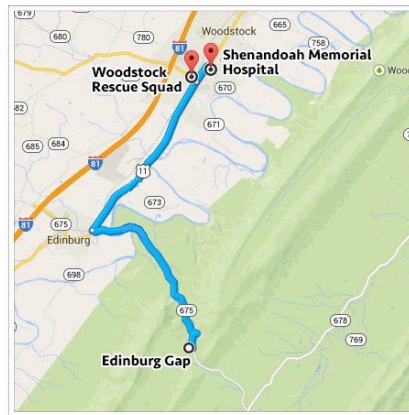
759 South Main Street
Woodstock, VA 22664
(540) 459-1100

Driving directions

- Head west on on State Rte 675 (Edinburg Gap Rd) for 2.7 miles.
- Turn right onto US-11 north (Main St) for 3.1 miles. Hospital is on the right.

Nearest cell phone reception

Edinburg Gap is on the western ridge of the Massanutters; you should have reception. If not, head west (left out of the aid station) on State Rte 675 (Edinburg Gap Rd) down into Edinburg.



AS 3: Woodstock Tower

Aid station location

38.8714°N, 78.4488°W

Rescue squad (6.3 miles, 20 minutes)

Woodstock Rescue Squad

132 W Reservoir Road
Woodstock, VA 22664
(540) 459-4231

Driving directions

- Head west on State Rte 758 toward for 3 miles.
- Turn right onto State Rte 665 (Mill Rd), follow for 1.4 miles.
- Turn left onto N Main St, follow for 1.8 miles.
- Turn right onto W Reservoir Rd.
- In 0.1 miles, rescue squad is on the right.

Hospital (5.8 miles, 19 minutes)

Shenandoah Memorial Hospital

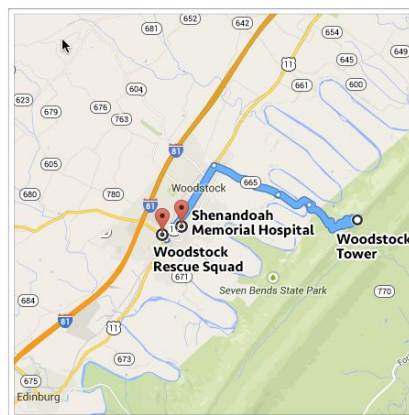
759 S Main St
Woodstock, VA 22664
(540) 459-1100

Driving directions

- Head west on State Rte 758 toward for 3 miles.
- Turn right onto State Rte 665 (Mill Rd), follow for 1.4 miles.
- Turn left onto N Main St.
- In 1.4 miles, hospital is on the left.

Nearest cell phone reception

Woodstock Tower is on the western ridge of the Massanutters; you should have reception. If not, head west (downhill out of the aid station) on SR-675 (Edinburg Gap Rd) down into Edinburg.



AS 6: Shawl Gap

Aid station location

38.8960°N, 78.3043°W

Rescue squad (9.4 miles, 20 minutes)

Front Royal Volunteer Fire and Rescue

221 North Commerce Ave
Front Royal, VA 22630
(540) 635-2540

Driving directions

- Turn left onto State Rte 613 northbound for 0.9 miles.
- Turn right onto State Rte 608, follow for 0.5 miles.
- Turn right onto State Rte 619, follow for 5.2 miles.
- At light, turn left onto US-340 N, follow for 0.9 miles.
- At light, turn right onto E Criser Rd and follow for 0.7 miles.
- Turn left onto Remount Rd (US-522), follow for 0.3 miles.
- At light, continue onto S Commerce Ave for 0.9 miles.
Rescue squad is on the right.

Hospital (9.2 miles, 20 minutes)

Warren Memorial Hospital

351 Valley Health Way
Front Royal, VA 22630
(540) 636-0300

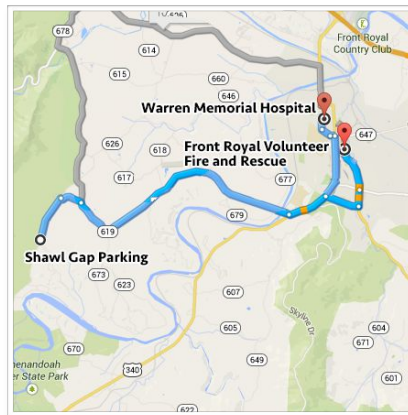
Driving directions (see directions to US-340 above)

- At light, turn left onto US-340 N, follow for 2.1 miles.

- Turn left onto W 6th St for 0.1 mi.
- Slight right onto Kendrick Ln for 0.2 mi.
- Turn right onto N Shenandoah Ave. After 0.2 miles, hospital is on the right.

Nearest cell phone reception

Shawl Gap Parking should have cell phone reception. If not, head north towards Front Royal.



AS 7: Veach Gap

Aid station location

38.8619°N, 78.3274°W

Rescue squad (13.8 miles, 30 minutes)

Front Royal Volunteer Fire and Rescue

221 North Commerce Ave
Front Royal, VA 22630
(540) 635-2540

Driving directions

- Take a right out of the aid station and follow State Rte 613 (Panhandle Rd) south for 1.6 miles.
- Turn left to stay on State Rte 613 and follow for 1.1 miles.
- Turn left onto US-340 N and follow for 9.1 miles.
- At light, turn right onto E Criser Rd and follow for 0.7 miles.
- Turn left onto Remount Rd (US-522), follow for 0.3 miles.
- At light, continue onto S Commerce Ave for 0.9 miles.
Rescue squad is on the right.

Hospital (13.6 miles, 30 minutes)

Warren Memorial Hospital

351 Valley Health Way
Front Royal, VA 22630
(540) 636-0300

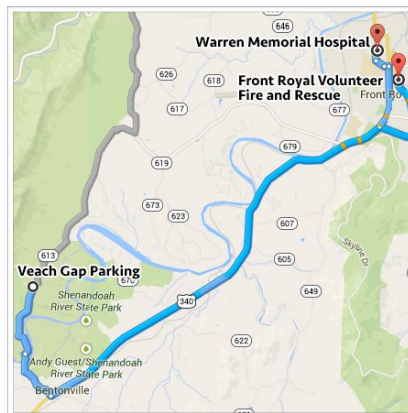
Driving directions (see directions to US-340 above)

- Turn left onto US-340 N and follow for 10.4 miles.

- Turn left onto W 6th St for 0.1 mi.
- Slight right onto Kendrick Ln for 0.2 mi.
- Turn right onto N Shenandoah Ave. After 0.2 miles, hospital is on the right.

Nearest cell phone reception

Veach Gap should have cell phone reception. If not, head north towards Front Royal.



AS 8: Indian Grave

Aid station location

38.7940°N, 78.3853°W

Rescue squad & hospital (15 miles, 35 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

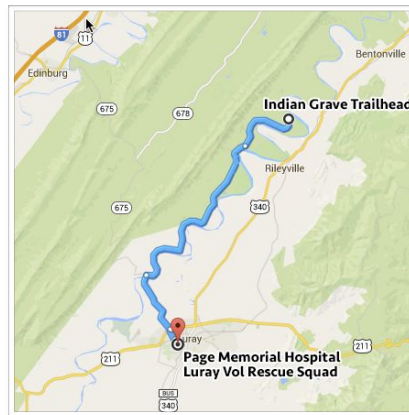
200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Head south on State Rte 717 for 3 miles.
- Merge right onto State Rte 684 and follow for 8.3 miles.
- Take a left at Bixler Bridge, crossing Shenandoah River
- Continue on State Rte 675 (Bixler's Ferry Rd) for 2.6 miles.
- After crossing US-211/US-340, take first right onto Bixler's Ferry Rd and follow for 0.4 miles.
- Turn left onto W Main St and follow for 0.1 miles
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Indian Grave Trailhead is outside of Fort Valley, and should have cell reception.



AS 9: Habron Gap

Aid station location

38.7704°N, 78.4237°W

Rescue squad & hospital (11 miles, 20 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Head south (left out of the aid station) on State Rte 684 and follow for 7.5 miles.
- Take a left at Bixler Bridge, crossing Shenandoah River
- Continue on State Rte 675 (Bixler's Ferry Rd) for 2.6 miles.
- After crossing US-211/US-340, take first right onto Bixler's Ferry Rd and follow for 0.4 miles.
- Turn left onto W Main St and follow for 0.1 miles
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Habron Gap parking is outside of Fort Valley, and should have cell reception.



AS 10: Camp Roosevelt

Aid station location

38.7282°N, 78.5171°W

Rescue squad & hospital (8 miles, 15 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

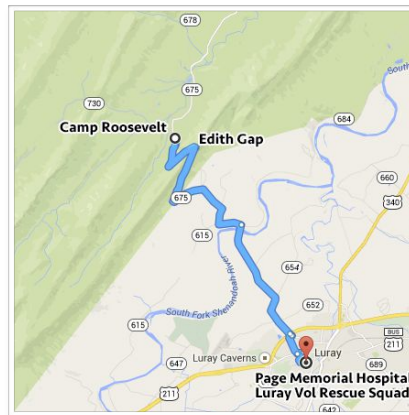
200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Climb State Rte 675, cresting Edith Gap after 1.3 miles.
- Continue down the other side for 2.8 miles.
- Take a left onto N Egypt Bend Rd and follow for 0.5 miles.
- Take a right at Bixler Bridge, crossing Shenandoah River
- Continue on State Rte 675 (Bixler's Ferry Rd) for 2.6 miles.
- After crossing US-211/US-340, take first right onto Bixler's Ferry Rd and follow for 0.4 miles.
- Turn left onto W Main St and follow for 0.1 miles
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Camp Roosevelt is at the base of the East Ridge of the Massanutten and is likely shadowed from cell reception. Edith Gap (38.7253°N,-78.5095°W), is on the crest of the ridge and is only 1.3 miles up State Rte 675 from the aid station.



AS 11 & 15: Gap Creek

Aid station location

38.7082°N, 78.5610°W

Rescue squad & hospital (15 miles, 35 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

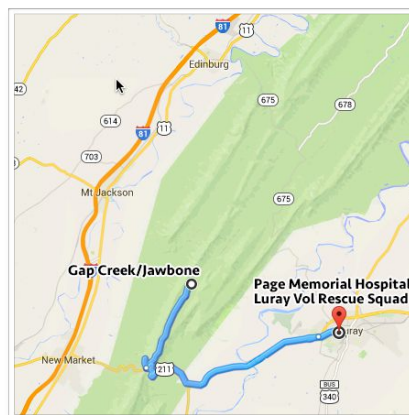
200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Head southwest (left out of aid station) on Crisman Hollow Rd for 4.5 miles toward US-211.
- Make a left onto US-211 East and follow for 7.9 miles.
- Slight right onto West Main St, follow for 0.9 miles.
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Nestled between two ridges, cell phone access here is questionable. Head south (left out of the aid station) on Crisman Hollow Rd; you should have clear line-of-sight to cell towers within 4 miles or so, before reaching US-211.



AS 12: Visitor Center

Aid station location

38.6427°N, 78.6113°W

Rescue squad & hospital (9 miles, 15 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

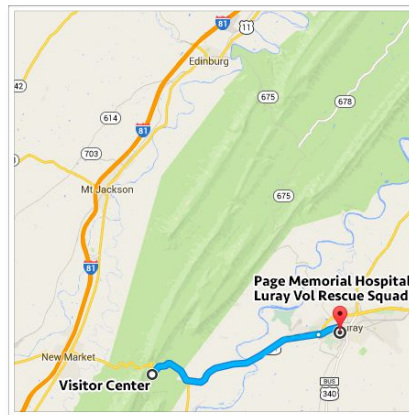
200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Take US-211 East for 7.9 miles.
- Slight right onto West Main St, follow for 0.9 miles.
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Cell phone reception

Situated on US-211 at the crest of the southern Massanutters, this aid station is one of the most accessible at MMT. You should have excellent cell coverage. If not, it is a short drive to Luray (to the east) or New Market (to the west) on US-211.



AS 13: Bird Knob

Aid station location

38.6076°N, 78.6323°W

Rescue squad & hospital (19 miles, 40 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

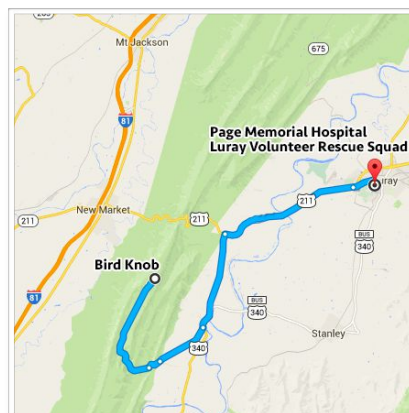
200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Follow Forest Access Rd and Newport Rd for 8.0 miles to US-340 North.
- Take US-340 North 9.8 miles to West Main Street in Luray.
- Slight right onto West Main St, follow for 0.9 miles.
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Cell phone reception

Bird Knob is the highest (2,750 feet) and most remote of the MMT aid stations. Cell coverage is very spotty.



AS 14: Picnic Area

Aid station location

38.6376°N, 78.6088°W

Rescue squad & hospital (9 miles, 12 minutes)

Luray Volunteer Rescue Squad

25 Memorial Drive
Luray, VA 22835
(540) 743-3659

Page Memorial Hospital

200 Memorial Drive
Luray, VA 22835
(540) 743-4561

Driving directions

- Take US-211 East for 7.9 miles.
- Slight right onto West Main St, follow for 0.9 miles.
- Turn right onto Memorial Dr.
- Rescue squad is on the left after 0.1 miles. Hospital is on the left after 0.3 miles.

Nearest cell phone reception

Situated just off US-211, this aid station is one of the more accessible at MMT. You should have excellent cell coverage. If not, it is a short drive to Luray (to the east) or New Market (to the west) on US-211.

