

Handcycle Assistance Team, H-CAT Pittsburgh Marathon



Mitigating Risks and Maximizing Benefits of Participating in Adaptive Reconditioning Programs

State of the Science Symposium
Sept 2, 2020
Dan Fisher
University of Pittsburgh



Agenda

- Health Benefits of Hand-Cycle training and racing
- History of the Pittsburgh Marathon
- Background behind supporting the Hand-Cycle Division
- Objectives, Concept of Support
- Pulling together a team of skilled volunteers
- Race Day Events
- Finish Line Area Activities
- Outcomes
- Success Stories



Health Benefits of Handcycling

- Provides many of the same benefits of bicycle racing and exercise
- Improved Cardiovascular Fitness
- Increased Endurance
- Faster Recovery Rate
- Stronger Heart Muscle
- Muscle Gain
- Improved Core Strength
- Increased Arm Strength
- Social Opportunities
- Improved Coordination
- A Physical and Mental Challenge

Operating a handcycling requires a combination of pedaling, steering, braking and changing gear. The learning process can improve coordination and dexterity.

Handcycling burns a similar number of calories per hour of activity as cycling does

<http://www.handcycling.co.uk/health-benefits-of-handcycling>

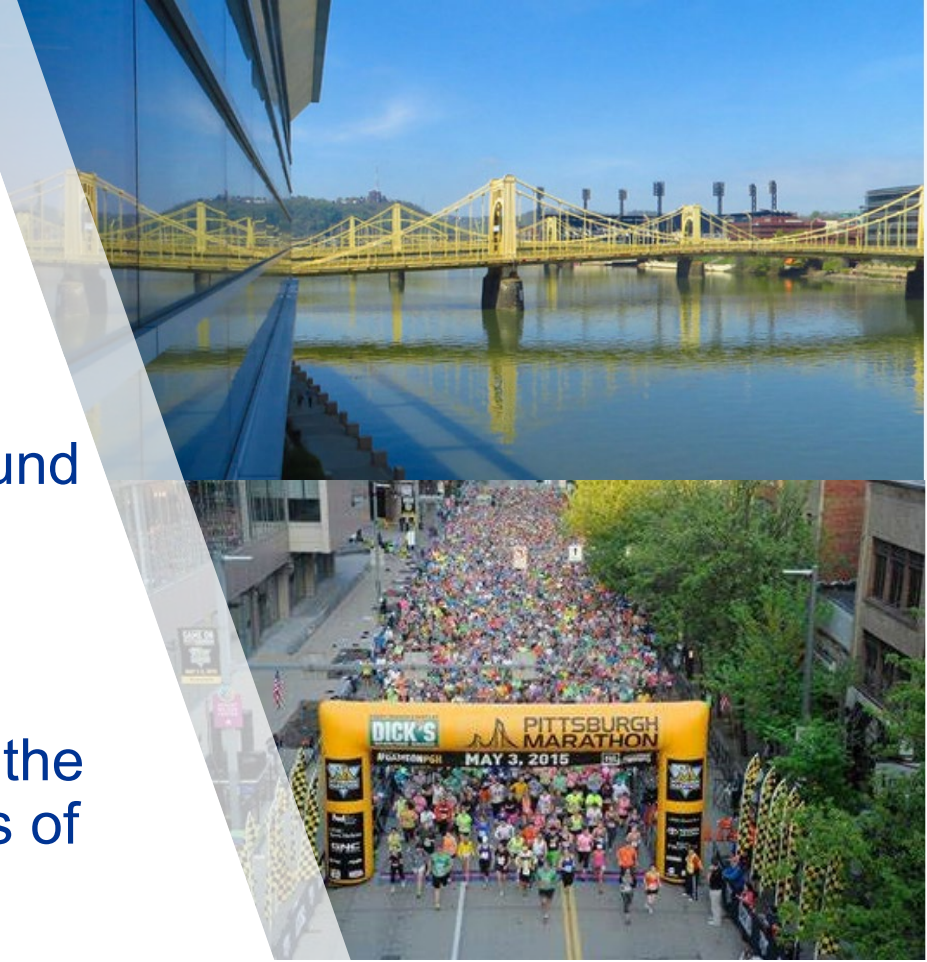


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History of the Pittsburgh Marathon

- Historically, the course has wound through the unique and hilly topography of the city
- Crossing five different bridges, the course traverses all three rivers of Pittsburgh's at least once
- With 24 miles of riverfront trails, beautiful parks, historic attractions and home to 90 neighborhoods



A little bit about the Race

- The Pittsburgh Marathon was held annually from 1985-2003, starting again in 2009
 - Five-year hiatus
 - Relaunched in 2009 and debuted with a sold-out field of 10,000 participants
- P3R – Pittsburgh Three River, Runners
 - successfully relaunched the Pittsburgh Marathon
 - expanded to organize a year-round calendar of events
 - recognized as event-planning experts
 - Other Events
 - EQT Ten Miler
 - Fleet Feet Liberty Mile
 - Greater Allegheny Passage Relay
 - Heineken 0.0 Pittsburgh Earth Day Run



A little bit about the Race

- 1st Weekend of May
 - Saturday - 5K and Kids Run
 - Sunday – ½ Marathon, Full Marathon, 2 to 5 person relay
- Race weekend of Seven different events
 - Large health and fitness expo
 - Nearly 40,000 runners
 - More than 50 sponsors
 - 27 staff members
 - Over 4,000 volunteers
 - Charity program started in 2009, over \$13 million raised



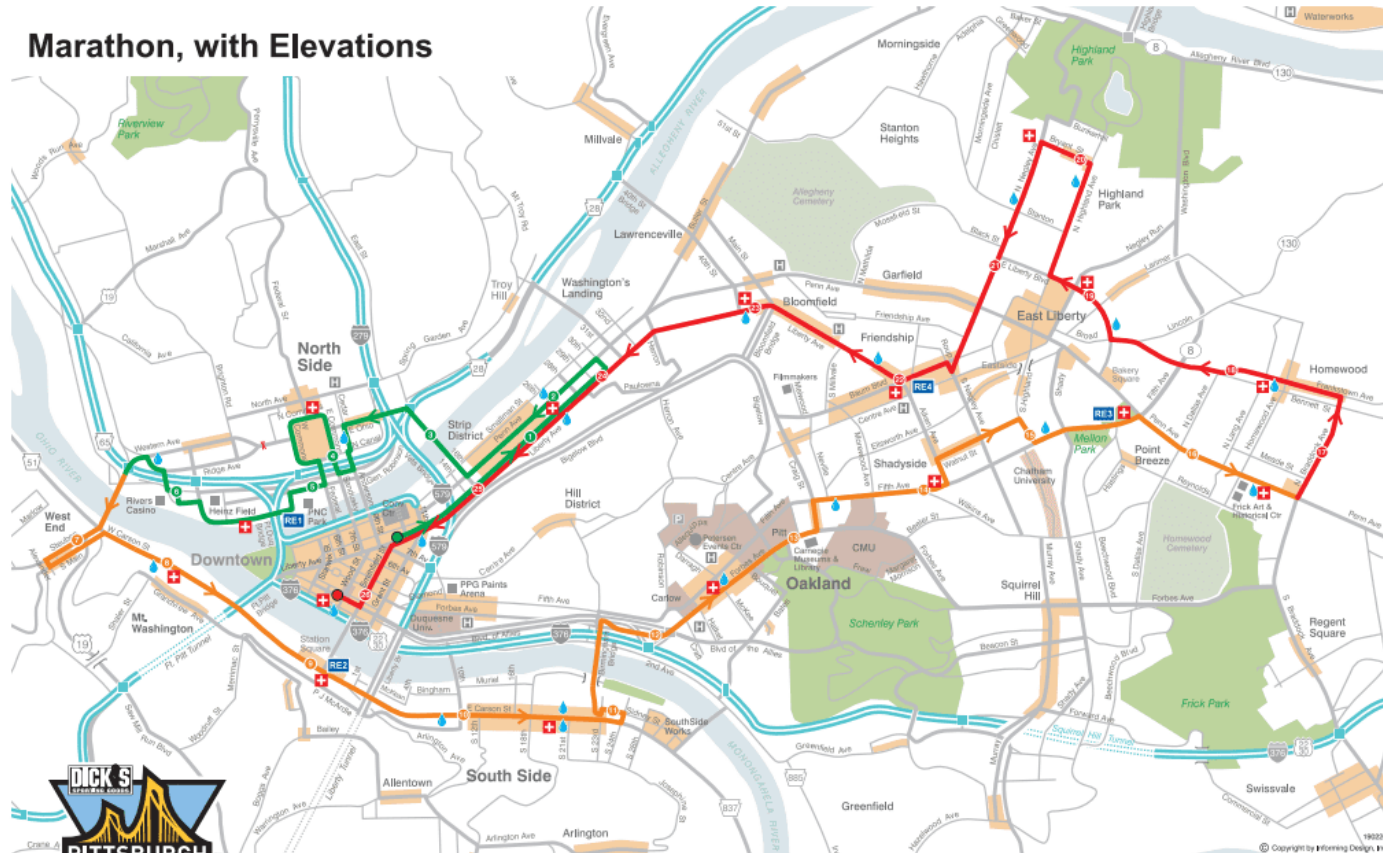
Pittsburgh Marathon By the Numbers, 2019

- Over 40,000 total participants throughout the weekend events
- 75,000 people went through the race expo
- 4,400 ran the 5k
- 10,000 in the kids race
- 500 toddlers in the Toddler Trot
- 4,400 registered for the full marathon
- 14,000 registered for the half marathon
- 5,000 registered for the relay
- 10,000 square foot medical tent at the finish line
- 26 ambulances on standby
- 18 first aid stations
- 500 medical personal



A little bit about the race

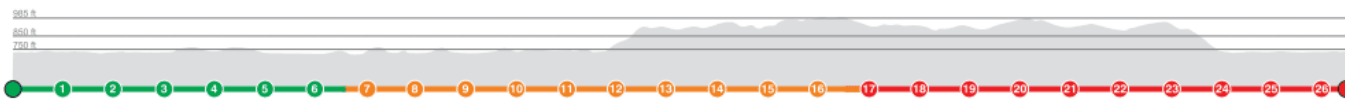
Marathon, with Elevations



Sunday, May 5, 2019

- Start
- Finish
- ● ● Mile Markers
- RE Relay Exchange
- Fluid Station
- + Aid Station

- 1st Part of the Marathon Course
- 2nd Part of the Marathon Course
- Final Part of the Marathon Course



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Following the 2013 Race



History of the Hand-Cycle Assistance Teams

- Race Director, Patrice Matamoros reached out to Dr. Rory Cooper, past winner, requesting assistance on how to better support the Hand-Cycle Division
 - Great reputation of supporting runners but wanted to expand Hand-Cycle Participation
- Rory and I worked together and developed the Concept of Support – H-CAT, to provide support before, during and after the race (Rory expertise and my work on ATM)



Patrice Matamoros



Rory Cooper, PhD



Hand-Cycle Assistance Team H-CAT

The primary objective is to provide medical and non-medical assistance on the marathon course to enable the handcycle and pushrim athlete to continue with the race

- if that is not possible, assist the athlete in getting the necessary medical aid and handcycle assistance
- provide them with a means of getting themselves and their handcycle back to the finish line area and to private transportation



Identifying Concerns - Brainstorming

Objectives

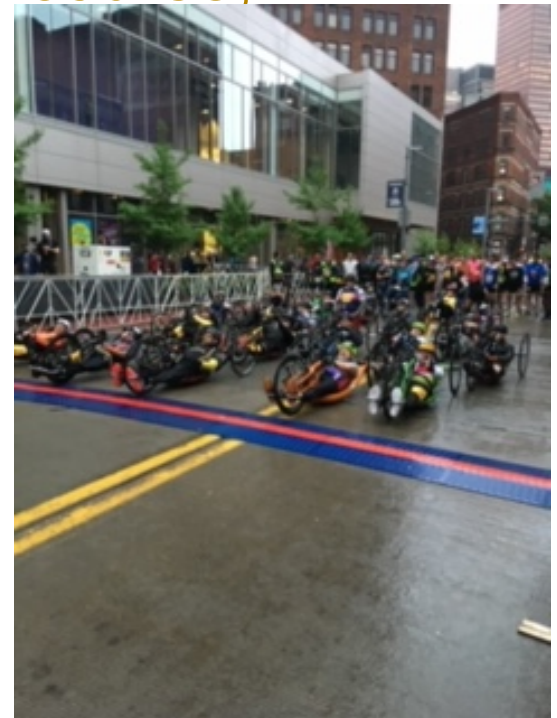
- Make the race safe, enjoyable, and inclusive for the Handcycle Athletes
- All support plans need to be in accordance with the Race Headquarters and Organizers Guidelines
- Integrated with the **Medical Support Plan**
- Develop a plan that is flexible, logical and sustainable
- Do the necessary planning before race day
- Build in a review process for continues process improvement (AAR)
- **Single Point of Contact**



Identifying Concerns - Brainstorming

Considerations for Pittsburgh

- **Weather:** Cold, Hot, Rain
- Hilly course
- Many bridges – hills, impact access to course
- Out and back course
- Many turns, road closures
- Bicycle Mechanic and excess to course, Credentials, Vehicle Markings
- Radio Communication, quantity, distance and hills (relays), call signs
- Sponsor – PNC Bank



Hand-Cycle Assistance Team H-CAT

Provide assistance with - checklist:

- Registration
- Communication with all registered athletes – POC
- Coordinate H-CAT Volunteers
- Represent the Hand Cycle Division and the monthly Medical Coordination Meetings
- Coordinate with Bicycle Escorts and Non-Medical Assistants
- Race packet pick-up
- Spaghetti Dinner



Hand-Cycle Assistance Team H-CAT

Provide assistance with - checklist: continued

- Radio and phone communications
- Vehicle U-Haul Pick-up
- PM&R Doctors and Medical Supplies
- Volunteers credentials and gear
- Races equipment, supply's and gear
- Awards, medals and top finishers
- Coordinate VIP/Dignitaries
- Mechanical and Medical support during and after the race
- Record the hand-cycle finishers and times (accountability)
- Return to privately own vehicles if necessary



Handcycle Assistance Team H-CAT

Concept of Support

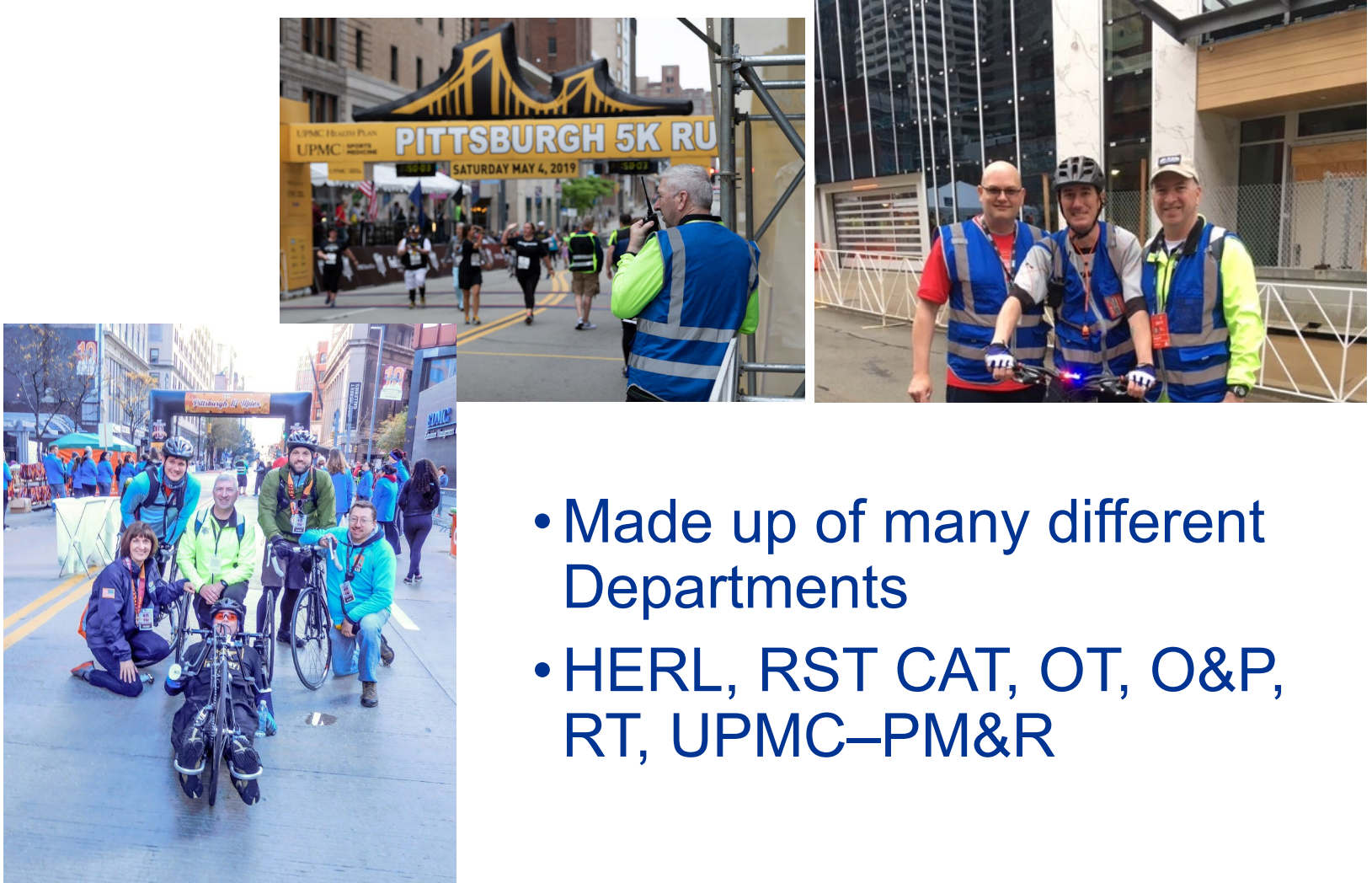
Three Handcycle Assistance Teams, H-CAT

5-6 Person Team – **Skilled Volunteers**

Manager - Rory Cooper			
Manager - Dan Fisher (717) 414-9203			dfisher@pitt.edu
Assistant Manager - Rosi Cooper			
Location - 3 Teams	Start/Finish	Forbes Ave	Bakery Square
	H-CAT 1	H-CAT 2	H-CAT 3
Team Leader	Rob McDonough	Mike McConegly	Vince Schiappa
Assistant Team Ldr	Kristine Fisher		
Driver	Charlie Ghriskey	N/A	Joe Straatmann
Team Mechanic	Josh Marino	Ben Grabrosky	Mendel Marcus
Medical Personnel	Andrew McCoy & Marissa Pavlinic	Alex Lloyd	Matthew Sherrier
Assistant Mechanic	Cosette Carter		Zach Anzelone



Hand-Cycle Assistance Team

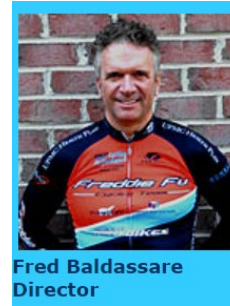


- Made up of many different Departments
- HERL, RST CAT, OT, O&P, RT, UPMC-PM&R



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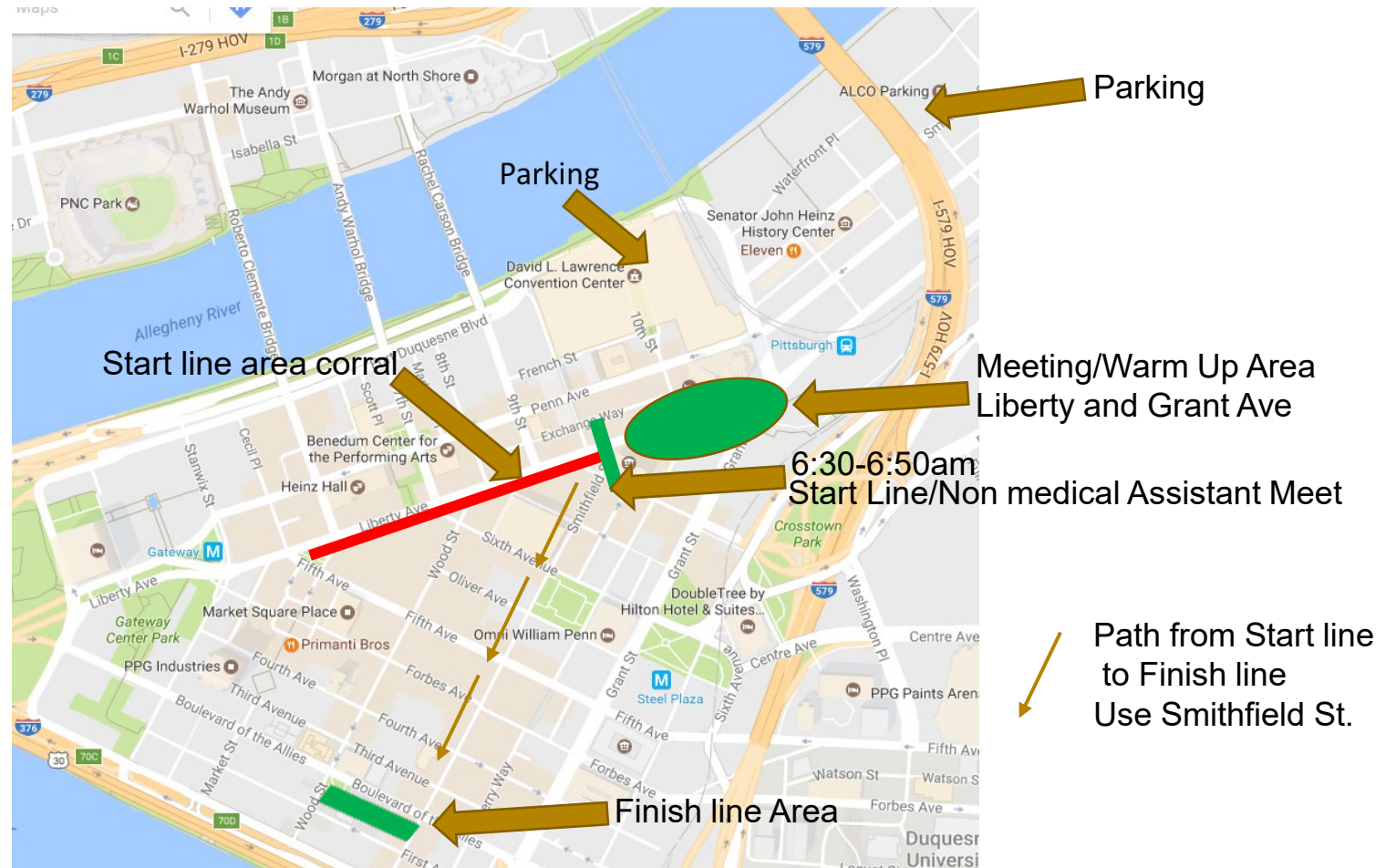
Fred Baldassare
Director

Bicycle Escort with each Hand- Cyclist

- With the help of Race Organizers we coordinated with the Freddie Fu Cycling Team – Fred Baldassare
- They are registered with USA Cycling and is a member of the Allegheny Cycling Association (ACA) and Pennsylvania Cycling Association (PCA).



Pittsburgh Marathon Start/ Finish Line Area and recommended Parking



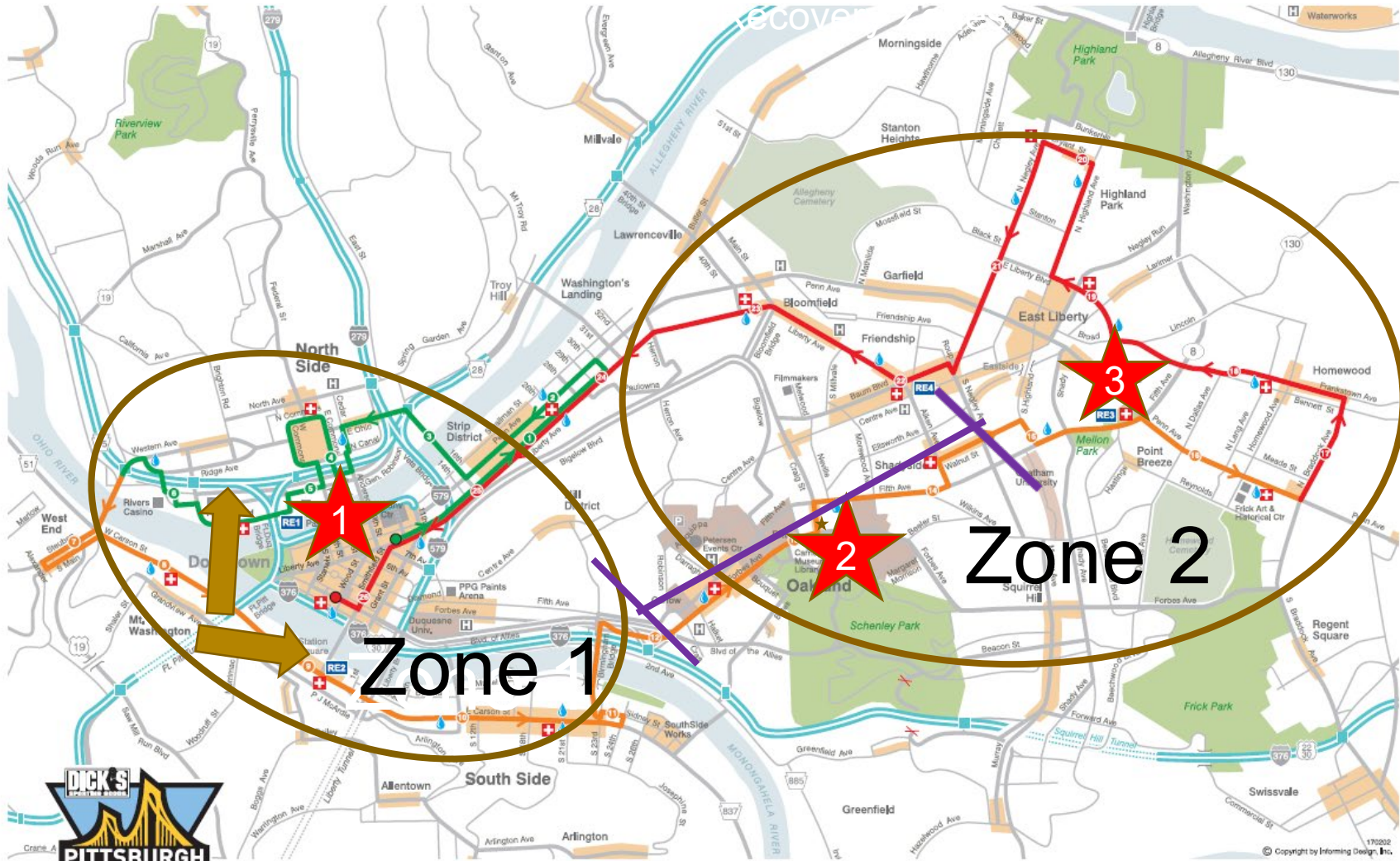
Course Map



Hand-cycle Assistance Teams Locations



Van - Hand-cycle



Sunday, May 7, 2017

- Start
- Finish
- 20 Mile Markers
- RE Relay Exchange
- 💧 Fluid Station
- ✚ Aid Station

- 1st Part of the Marathon Course
- 2nd Part of the Marathon Course
- Final Part of the Marathon Course



Hand-Cycle Assistance Team H-CAT

Important facts

- A total of 24 handcycle participants are registered. All athletes have been pre-screened and have agreed to adhere to the rules and instructions outline in attachment A.
- The H-C race will start at 6:50am, 5 May, at the intersections Liberty and Garrison, downtown Pittsburgh.
- The elite ½ marathoner start 6:55am, Full Marathon runner's race will start 10 minutes later, at 7:05am from the same location.
- All handcycle athletes will report past security to the warm-up corral at Liberty and Grant Ave between 6:00-6:15 am.
- Athletes will move 6:30am. To start line area in reverse order (next slide)
- Team 1 – loads up in U-Haul and moves to Check-Point 1
- Each athlete is authorized to designate non-racing assistance that may aid the athlete in getting to the start line handcycle corral and will assist in the finish line area getting the athlete back to their vehicle



Handcycle Assistance Team H-CAT

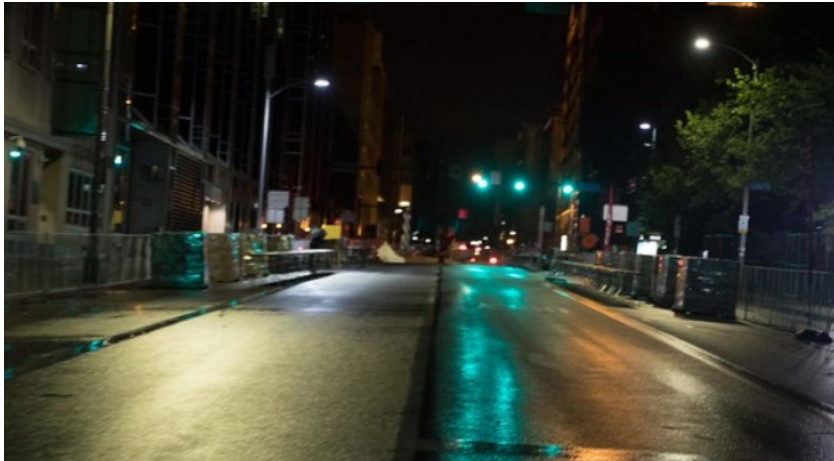
Important facts

The agenda for Sunday morning:

- **6:00am** - All racers (and assistant) will check-in with Handcycle Assistance Team, H-CAT Manager, Dan Fisher, at the Handcycle Corral located outside the Westin Hotel and Convention Center (Grant and Liberty, front-right looking at hotel).
- **6:15am** - Enter secure area past security at **Grant and Liberty**. We will be asked to link-up with Bicycle Escorts Riders
- **6:20am** - Conduct final inspection and assistance to hand cyclists
- **6:30am** - Directed to line-up at pre-designated start line position (4 rows of 6). Assistant/escort gather belongings and move to the opposite side of the street (right side) and will take Smithfield St to finish line area after the start of the race.
- **6:45am** – Receive final **Safety instructions** from Handcycle Assistance Team, H-CAT Manager
- **6:50am** - Start time for Handcycle Division is (5 minute before ½ Marathon elite runner and 15 minutes before elite runners)
- **8:00am** – Finish line and Handcycle aid station area



Race Day starts early



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Handcycle Assistance Team H-CAT

Objective in corral between 6:15-6:40am

- Attendance and link-up Athlete with their designated bicycle escorts rider
- Conduct final inspection of and provide assistance to racing hand-cyclist
- 6:30am the athletes will move to start line under our direction (line up in designed order) for 6:50am race start
- Receive final briefing/instructs from H-CAT Managers



Pittsburgh Marathon Hand-Cycle Division (roster and race numbers)

4		Zac Wolfe W323	Kyle Merbach W315	Balachandraw W301	Sarah Heinzl W303	Ben Hannibal W325 Push Rim
3	Mike LaMarca W313	Luis Quinones W318	B. Woodyard W324	Miles Kamson W311	Dave Gifford W309	Bitternbender W305
2	Tom Antolic W300	Biggins W304	John Entietto W308	Dan McCoy W314	Mark Green W310	A. Molinaro W316
1	Rory Cooper W306	Ken Bestine W302	Lee Tempest W322	Attila Domas W307	Kevin Siebarth W319	Bruce Newman W317

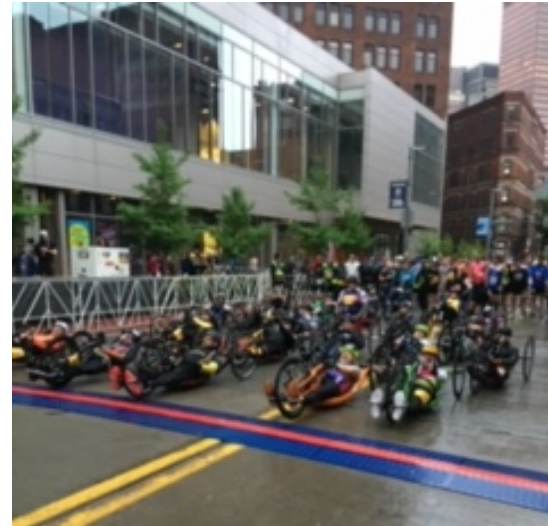
START LINE



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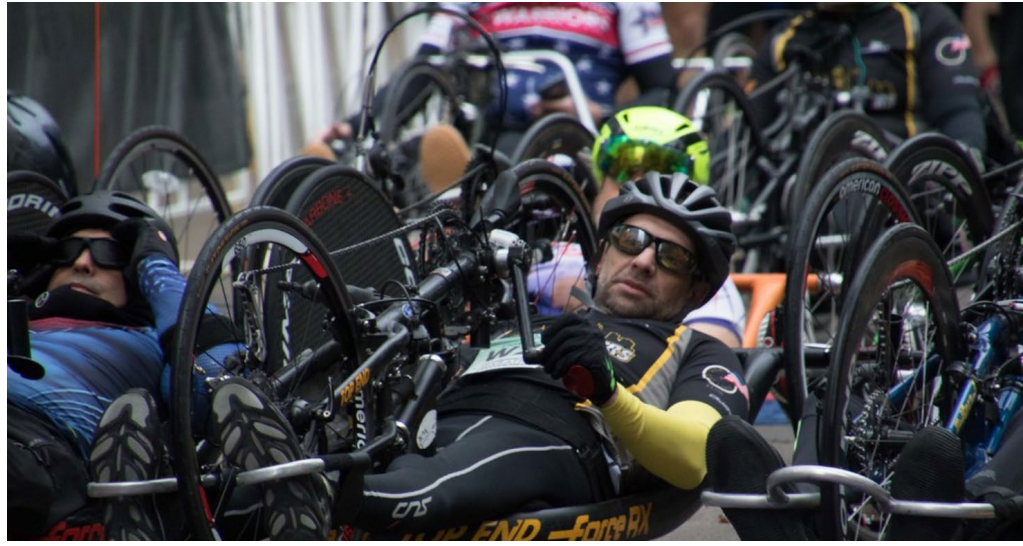
Lining Up at the Start Line



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Lining up at the Start Line



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Start of the Marathon



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Throughout the Race

- Bicycle escort maintain contact and provide instructions to the hand-cyclist
- H-CAT team monitors the racers as they pass various checkpoints
- Maintain radio contact
- Respond to any Mechanical or Medical Emergency
- Keep the Race Directors and Medical Team reference the progress of the race
- Record the finishing place and times
- Provide Finishing Medals
- Escort to Medical Aid Station (rest, recovery, Med check)
- Link up with Non-Medical Escort and equipment



Medical and H-CAT Volunteers



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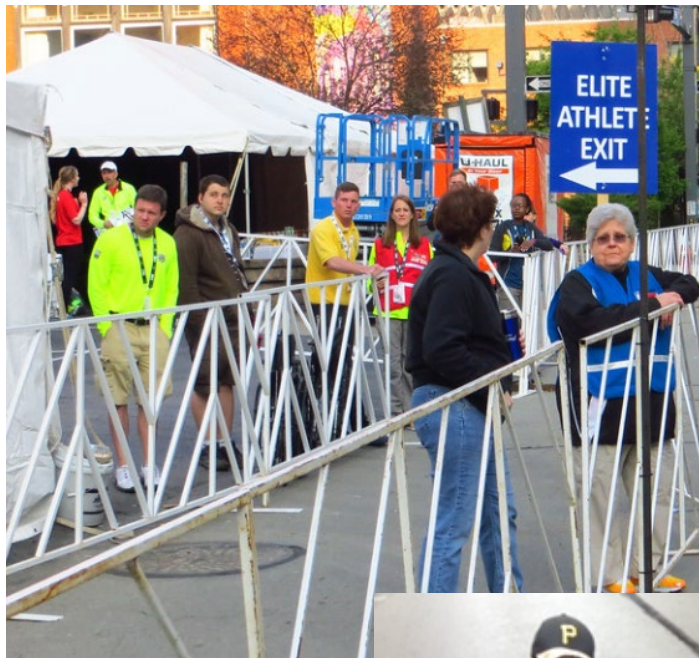
Medical Tent and Elite Runners Aid Station



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Finish Line Area – Elite Athlete Aid Station



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Annual Marathon Medals



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Finish Area – Medals being Awarded

MG Tim Hilty



SMA Dan Daily, Rory Cooper and CSM Chris Kepner



Handcycle Assistance Team H-CAT

If your handcycle breaks-down or receives a flat tire during the race

- They will receive initial assistance from their bicycle escort personnel
- If additional assistance is necessary, the team will be contacted by radio
- The H-CAT members will respond as quickly as possible by bicycle or by support van
- If non-medical assistance cannot be rendered in a timely manner and get the athlete back into the race than the support team will load the athlete (wheelchair provided) and handcycle into the van for transport to the finish line area.
- Be aware that there will be a designated Handcycle and Push Rim finish line Aid Station located on Blvd of the Allies, 50 after finish line area. This aid station will be supported by Physical Medicine and Rehabilitation, PM&R medical personnel.



Handcycle Assistance Team H-CAT

H-CAT Team 1

5 Member Team

- **Report NLT 5:20am**, Drivers report to Marathon Headquarters to pick-up team cargo van and possibly marathon passenger car - 810 River Ave, Pittsburgh, PA 15212
- Other team members at meet at Marathon Headquarters or at the Start Corral, NLT 6:00am.
- Provide any necessary assistance at corral/start line area
- The team Mechanic will provide any last-minute assistance to athletes' hand-cycles (tire pump, zip ties, duct tape)
- The team Physician will provide medical assistance as necessary
- Team departs NLT 6:40am for Exchange Zone 1, Route - TBD (Allegheny and Casino – Carnegie Science Center)
- Monitors race progress (course map)
- Responds to requests for assistance from bicycle escorts



Handcycle Assistance Team H-CAT

H-CAT Team 1

5 Member Team (Continuation)

- Dispatches mechanic and or medical personnel (by bicycle or van) as necessary
- Once the last handcycle athlete passes the North Side location (**Allegheny and Casino – Carnegie Science Center**), the team moves to Exchange Zone 2 located, Carson Street, just past Smithfield Street bridge (Route TBD)
- Once the last hand cyclist is past the Birmingham Bridge the team moves back to the finish line area and park near main medical tent (same as last year)
- Monitors the situation until the last hand cyclist crosses the finish line area
- Team is released when cargo van is returned to Marathon Headquarters (drop off keys?)



Handcycle Assistance Team H-CAT

H-CAT Team 2

5 member team (no driver)

Reports NLT, 7:00am (Location 12.4 mile mark, Oakdale, Intersection of Forbes Avenue and McKee Place in front of Eureka Bank)

- First handcycle athlete should be arriving around 7:30am.
- No van to transport disabled handcycle; will need to coordinate with Team 3 for assistance and transportation of handcycle and athlete if necessary.
- Teams monitors race progress (course map)
- Responds to requests for assistance from bicycle escorts
- Dispatches mechanic and or medical personnel (by bicycle) as necessary
- Once the last handcycle athlete passes the 3rd exchange zone location the team is released



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H-CAT Team 3

6 member team

Report NLT, 7:15m (Location, 15.5 mile mark, East Liberty, Bakery Square, Intersection of Fifth Avenue, and Mellon Park and Penn Avenue – Exchange Zone 3)

- Team 3 driver reports to Bakery Sq to pick-up U-Haul Van
- First handcycle athlete should be arriving around 8:00am.
- Teams monitors race progress (course map)
- Responds to requests for assistance from bicycle escorts
- Dispatches mechanic and or medical personnel (by bicycle or van) as necessary
- If necessary the team dispatches the van to transport handcycle and athlete to the finish line area
- Monitors the situation until the last hand cycle athlete crosses the finish line area
- Team is released when the team transfers the wheelchair a POV and returns cargo van to Marathon Headquarters (drop off keys?)



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H-CAT Members Packing List

Individuals

- Rain Gear (Dress in layer)
- Thermos
- Breakfast/Lunch/Snacks
- Credentials (cards and vest)
- Cell Phone

Team

- List of race participants by number
- Cell phone number list
- Map of Course
- U-Haul Keys
- Towels
- Blankets
- Transfer wheelchair



Mechanic Packing list

Basic Tools and Supplies

- Wrench
- Pump
- Inner tubes
- Electrical and Duck Tape
- Plastic Ties
- Towels
- Etc...



Medical packing list

Point of Contact – UPMC

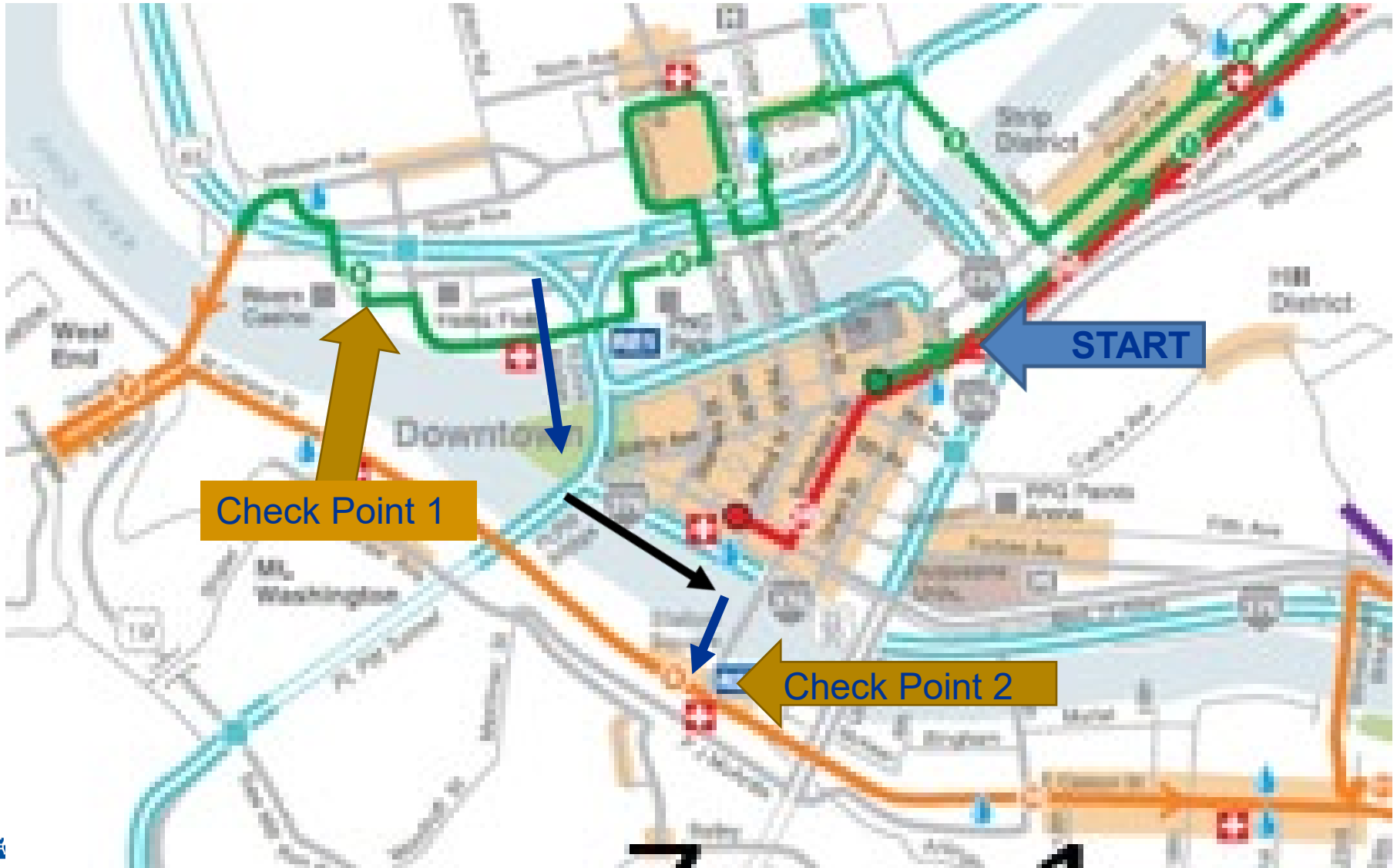
May coordinate additional supplies for runner's aid station

Basic First Aid Supplies

- Gloves
- Band aids
- Gauze 4"x4" or 2"x2"
- Tape
- Water to cleanse with
- Hand Sanitizer
- Towels
- Scissors



Team 1



Team 2



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Team 3



Team 3 - Location



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Outcomes

- Athletes appreciated the support received from the H-CAT Team members.
- Bicycle Escorts are always impressed by the quality and competitiveness of the Handcycle Racers
- Building a reputation and being a Hand-Cycle Friendly Race
- Have been asked to support other races throughout the year
 - EQT 10 Miler, Lemieux 6.6K, Pittsburgh 5K, Pittsburgh Great Race 10K, March of the Fallen 28 Miler



Success stories

- Every year we have several first time Hand-Cycle athletes and return participants
- We get a lot of good press coverage of the Hand-Cyclists
- We repair the flat tire or replace the wheel, allowing the racers to finish. In one case the racer went on to win the race.
- H-CAT team has located races on the course and returned them to the finish line area.
- Responded to a call, only to find out a runner sprained their ankle and needed a wheelchair.
- Responded to a crash, could not repair the Hand-Cycle, the PM&R doctor evaluated the patient and recommended that to the hospital, Athlete had a broken leg.



Success Story

Kaden Herchenroether
Winning the Pittsburgh
Great Race 10K



Still in the Fight: Pitt's Rory Cooper Recovers from Crash to Complete Marathon

Thursday, May 21, 2020

SHARE



Rory Cooper (left) with friend David Gifford (right) just before the 2020 virtual Pittsburgh Marathon. The race was Cooper's first since his accident in October. Cooper and Gifford successfully completed the race, with Cooper's wife Rosemarie riding alongside them. (Rosemarie Cooper)



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Looking Forward to the Future

Troy Schooley- New Race Director



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Pittsburgh Marathon Handcycle Assistance Team

Thank you for the opportunity

Dan Fisher
dfisher@pitt.edu



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A photograph of the Cathedral of Learning at the University of Pittsburgh at night. The building is illuminated with warm yellow lights, and a bright blue laser beam extends from its top into the dark sky. The foreground shows a green lawn and trees, some of which are also lit up. The sky is a deep blue with some light clouds.

Questions?

**University of Pittsburgh
Cathedral of Learning**