

Appalachian Highlands Network

National Park Service
Inventory and Monitoring Division



Standard Operating Procedure DWQ01

Safety—Version 1.6

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Summary

This standard operating procedure (SOP) explains the steps involved in handling an on-duty or job-related injury or illness. Read this SOP prior to conducting fieldwork and keep a copy in all vehicles for quick reference.

Revision Log

Revision Date	Author	Changes Made	Reason for Change	New Version #
2/28/2016	UGA	Formatting and scientific editing.	Format to NPS standards	1.1
6/10/2016	APHN	Addressing UGA comments.	Address UGA comments	1.2
11/20/2016	APHN	Addressing Regional comments	Addressing regional comments	1.3
11/29/2016	APHN	Edited for consistency with continuous protocol	Consistency	1.4
10/27/2017	APHN	Addressing Regional comments	Addressing regional comments	1.5
10/28/2018	APHN	Addressing BISO/OBRI comments	Addressing BISO/OBRI comments	1.6

Overview

The Appalachian Highlands Network (APHN) considers the occupational health and safety of its employees, cooperators, and volunteers to be of utmost importance. The network is committed to ensuring that all people involved with monitoring activities receive adequate training on National Park Service (NPS) safety procedures, incident reporting, and emergency response prior to conducting fieldwork. Everyone is responsible for maintaining a safe work environment for themselves and their coworkers. This SOP and supporting appendices summarize safety issues to cover during training of field personnel for water-quality monitoring. The SOP and appendices also serve as a first reference in case of an incident. Topics covered include emergency procedures and contacts, incident reporting, field preparation, safe field procedures, vehicle safety, and workers compensation procedures. First Aid procedures **are not covered** in this SOP. The outline and some of the content of this SOP follow SOP#1 in the Northeast Temperate Network's forest monitoring protocol (Tierney et al. 2014). Procedural descriptions are adapted from Chapter A9 of the United States Geological Survey (USGS) *National Field Manual for the Collection of Water Quality Data* (Lane and Fay 1997). Also see NPS Reference Manual 50B (NPS 2008) and USGS handbook 445-3-H: *Safety and Health for Field Operations* (USGS 2014).

A detailed job hazard analysis (JHA) has been developed for this protocol (see SOP DWQ02 Job Hazard Analysis—Version 1.4 [APHN 2017a]).

Responding to an Incident

Life-Threatening Medical Emergency

1. Personnel should call 9-1-1 or one of the emergency contacts in Appendix A. Near Big South Fork National River and Recreation Area (BISO) and Obed Wild and Scenic River (OBRI), use park radios to contact a park ranger or park headquarters. See Appendix A for directions to the nearest hospitals from each park along with emergency numbers.
2. As soon as it is practical to do so, personnel should inform their supervisor and the park's emergency contact (Appendix A).
3. Workers Compensation paperwork should be completed (Submit reports online to the [Department of Interior Safety Management System website](#)).

Non-Emergency Incidents

1. Personnel should contact their supervisor immediately after incident.
2. Workers compensation paperwork should be completed (this must be done within 48 hours of the incident—Submit reports online to the [Department of Interior Safety Management System website](#)).

Note: *Never discard original paperwork related to workers compensation claims (including information from doctor visits, CA-1, CA-2, CA-16 or CA-17 forms).*

Field Preparation

Detailed steps for field preparation are provided in SOP DWQ06 *Field Sampling Sequence and Sample Handling—Version 1.4* (APHN 2017b).

Use safety checklists when preparing for a field trip. Examples of detailed checklists are in section 9.11 of the USGS national field manual (Lane and Fay 1997). Develop your checklists from existing site safety information and site reconnaissance (job hazard analysis or site safety plan).

Prior to commencing work, visit the field site, if possible, to ensure you and your equipment can access, sample, and leave the site safely. Confer with employees who have previously visited the site—you might receive your most valuable safety information from them.

Keep a field folder for each site where water-quality data will be collected. The safety-related contents of a field folder include:

- Copies of the checklists mentioned above.
- Site type (confined space, wading site, bridge site) and site description.
- Site location (include map, site sketch, and description).
- Additional information specific to the site: for example, if it is open to hunting, and season dates; appropriate clothing (such as orange safety vests).
- Emergency contact information for each park (at the end of this SOP), location and telephone numbers for nearest medical facilities (Appendix A). Become familiar with this information before you are in the field and confronted with an emergency.

Personal Protective Equipment

Proper selection of personal protective equipment (PPE) is based on hazards likely to be encountered, as well as compliance with regulatory safety requirements. Detailed recommendations of PPE for various water-monitoring operations are in the USGS survey manual (USGS 2014).

Basic protective items:

- Personal flotation device (PFD), orange or other bright color
- Safety harness
- Walking stick or wading staff
- Wide-brimmed hat (hardhat, if working beneath bridges where falling debris or thrown items are a danger)
- Protective gloves
- Wading boots

- Wading belt (for chest waders)
- Safety glasses
- Sunglasses
- Sunscreen
- Fluids (water, sports drinks)
- Insect repellent
- Rain gear
- Temperature-modifying clothing
- Complete change of clothing, stored in dry area
- Bright-colored reflective vest

Additional safety equipment:

- Safety cones
- Flares
- Flashlight
- Flagging
- Bungee cords and tie-down straps (to secure loose articles)
- Fire extinguisher

Vaccinations

APHN staff involved with water quality monitoring in the field must be vaccinated for Hepatitis A, Hepatitis B, and tetanus. Follow Hepatitis vaccinations with a titer test to verify effectiveness of vaccine.

First Aid Kits

Every APHN vehicle has a first aid kit that remains with the vehicle at all times. In addition to the vehicle first aid kit, a field first aid kit remains with the monitoring crew at all times in the field. An inventory of first aid kits is performed at the beginning of each calendar year to ensure all medical supplies are in sufficient quantity and have not expired. Each first aid kit will have an inventory list of the supplies it should contain (see below). Promptly replace any used items in first aid kits.

Standard first aid kit contents:

- (8) Bandage, adhesive, fabric, 1" × 3" (2.5×7.6 centimeter [cm])
- (2) Dressing, gauze, sterile, 2" × 2" (5×5 cm), pkg./2
- (3) Dressing, gauze, sterile, 4" × 4" (10.2 × 10.2 cm), pkg./2
- (3) Dressing, non-adherent, sterile, 3" × 4" (7.6×10.2 cm)
- (2) Gloves, nitrile (pair), hand wipe
- (1) Trauma pad, 5" × 9" (12.7 × 22.9 cm)
- (6) Moleskin, Pre-Cut and Shaped, or other blister plasters
- (1) Duct tape, two inch by five yard (5×457 cm)
- (1) Bandage, elastic with velcro, 3" (7.62 cm)
- (4) Acetaminophen (500 milligram [mg]), pkg./2
- (4) Antihistamine (Diphenhydramine 25 mg)—fast-acting chewable form
- (4) Ibuprofen (200 mg), pkg./2
- (6) After Cuts & Scrapes anesthetic/antiseptic wipe
- (2) Cotton tipped applicator, pkg./2
- (1) Tape, 1 inch by 10 yards (2.5 × 914.4 cm)
- (3) Triple antibiotic ointment, single use
- (1) Wound closure strips, 1/4" × 4" (0.64 × 10.2 cm), pkg./10
- (1) Sawyer venom extractor (for snakebites)
- (5) Pre-contact poison ivy towelettes
- (10) Post-contact poison ivy towelettes
- (2) Bottles of Sting-Kill or other bee-sting treatment
- (2) Bottles of eye drops
- (15) Band-Aids, assorted sizes

Daily Communication and Planning

Crews must plan their daily sample locations before going into the field. Leave a detailed itinerary with APHN Program Manager or designated alternate. In the field crews will follow the InReach SOP (Appendix B). Crews will carry a charged APHN radio at all times while in the field. If available, crews will also carry cell phones. Note that radios and cell phones often do not get a signal in the river gorges. However, sometimes it is possible to send a text message even when there is no service. Crew members should familiarize themselves with “black out” zones before going in the field and check for a signal once they arrive at the work site, so contingency plans can be made in case of an emergency. When crews work separately in the field, discuss the daily plans for each crew before splitting up. When working in split crews, employ transmitter/receiver units for local communication between crews. If plans change while in the field, crews must notify each other before changing work locations or rendezvous plans. At the end of the day, crews must notify the APHN program manager or designated alternate when they have returned from the field.

Personal Gear

Each crew member is responsible wearing field-appropriate clothing and footwear such as long pants, a hat and hiking boots. Depending on the weather, crew members should take rain gear or warm clothing into the field, and keep an extra set of clothing in the vehicle. Crew members should take care to avoid overexposure to the sun by wearing sunscreen or protective clothing. Crew members should always carry ample water (2–3 liters [0.5–0.8 gallons]) and food when working in the field. To avoid dehydration, a serious condition that can cause complications if untreated, drink liquid frequently to maintain hydration on a warm day, even if you do not feel thirsty.

Field Safety

Slip, Trip, Fall Prevention

Uneven terrain, slippery rocks, dense brush, and fatigue are all hazards that could result in a slip, trip, or fall. Use the following guidelines to avoid injury:

- Always wear appropriate footwear such as sturdy hiking boots.
- Pay attention to where you are going and remain alert to potential hazards.
- Walk at an appropriate pace and adjust pace for changes in terrain (e.g., slow down and take smaller steps on slippery surfaces).
- Do not cross frozen rivers by walking across the ice, even if it appears to be solidly frozen.
- When hiking long distances, take breaks to avoid excessive fatigue.
- Use a hiking staff on steep or rocky terrain and for river crossings.
- When navigating to a location off-trail, choose the safest route (this may not be the shortest route). Whenever possible, avoid excessively steep terrain and sheer drop-offs. Always be careful when navigating over boulder fields or rocky banks and immediately alert others below of falling rocks.

Wading

Examine the section of a stream or river you plan to wade. Check the field folder for information relating to safety, including maximum depths in relation to stage (stream height), wading-section anomalies such as slippery conditions and drop-offs or holes (a wading rod can be used to help assess streambed conditions), and velocity curves for determining wadeable stages. **Do not attempt to wade a stream for which values of depth multiplied by velocity equal or exceed 10 square feet per second.** For example, a stream two feet deep but with velocities of five feet per second or more can be dangerous to wade.

Wear a personal flotation device (PFD) during wading activities.

- Approved PFDs for wading include the standard jacket type and the suspender type. The PFD must fit properly, be rated for your weight, and be in good condition.
- The PFD should be dried and kept indoors between trips.

Wear hip boots or chest waders. Boots and waders provide protection from cold and pollutants, as well as from underwater objects.

- Be aware of the possibility of slipping and going underwater (feet up, head down) while wearing them.
- Avoid hip boots with tight ankles. These are difficult to remove in an emergency situation.
- Avoid chest waders that are tight-fitting at the top. Like tight-ankled hip boots, they are difficult to remove in an emergency situation. Wear a wading belt with chest waders to prevent waders filling with water. Whenever chest waders are worn, a PFD also must be worn.

Be aware of surrounding conditions:

- Watch for debris floating downstream, such as ice, logs, and aquatic vegetation.
- Watch for sand channels that can shift underfoot and entrap personnel.
- Watch the stream stage, especially when it could rise rapidly.
- When wading below a dam or control structure, contact the gate operator before entering the stream and communicate to them that crews will be working downstream and for what time period.

Proper use of Backpacks

Crew members will be expected to carry packs up to and in excess of 35 pounds (15.9 kilograms [kg]) over uneven terrain on a daily basis. It is important for crew members to understand appropriate ways to pack, lift and carry a heavy backpack to avoid serious back, neck and shoulder injuries. Follow these guidelines:

- All crew members are expected to use a sturdy field pack with padded and adjustable hip and shoulder straps. Packs will be provided for each crew member.
- Pack heavy items in the center of the pack and close to your back.
- Evenly distribute weight from side to side.
- Once equipment is packed, tighten the compression straps to minimize movement inside the pack during travel.
- When picking up a heavy pack, use your legs to do the lifting, and use slow, smooth movements. Keep your back straight and keep the pack close to your body. Do not twist or bend at the waist and do not swing the pack quickly over one shoulder.
- Always carry a pack with both shoulder straps and with the hip belt and chest straps secured.
- Position the pack near the center of the back, with most of the weight resting on your hips.
- Keep your pack organized and only carry the necessary equipment, food, and water (to reduce weight).

Weather

Weather conditions on the Cumberland Plateau can be hazardous and can change quickly. The crew is responsible for planning their day according to the local weather forecast and being aware of their surroundings and changing conditions. This is important when working in the bottom of the river gorges, where flash floods are common. Localized rain storms in the headwaters can cause the rivers below to rise swiftly, even when no rain falls in the lower reaches. Crew members should always be alert for the sound of thunder or the presence of storm clouds in the watersheds upstream. A particularly illustrative example of this occurred in the spring of 2013, when a park visitor on Clear Creek (OBRI) narrowly missed being swept away in a sudden flash flood rushing down the gorge. The gage recording at Lilly Bridge (Figure SOP 1-1) which captured the event makes it clear the term “wall of water” is not an exaggeration. The gage reading showed that the river rose 5,000 cubic feet per second—from barely moving to a roaring flood—in less than 15 minutes. This event demonstrated how important it is for park and network staff to check on potential nearby precipitation events before setting out to work in a riparian zone and to stay alert to changing conditions.

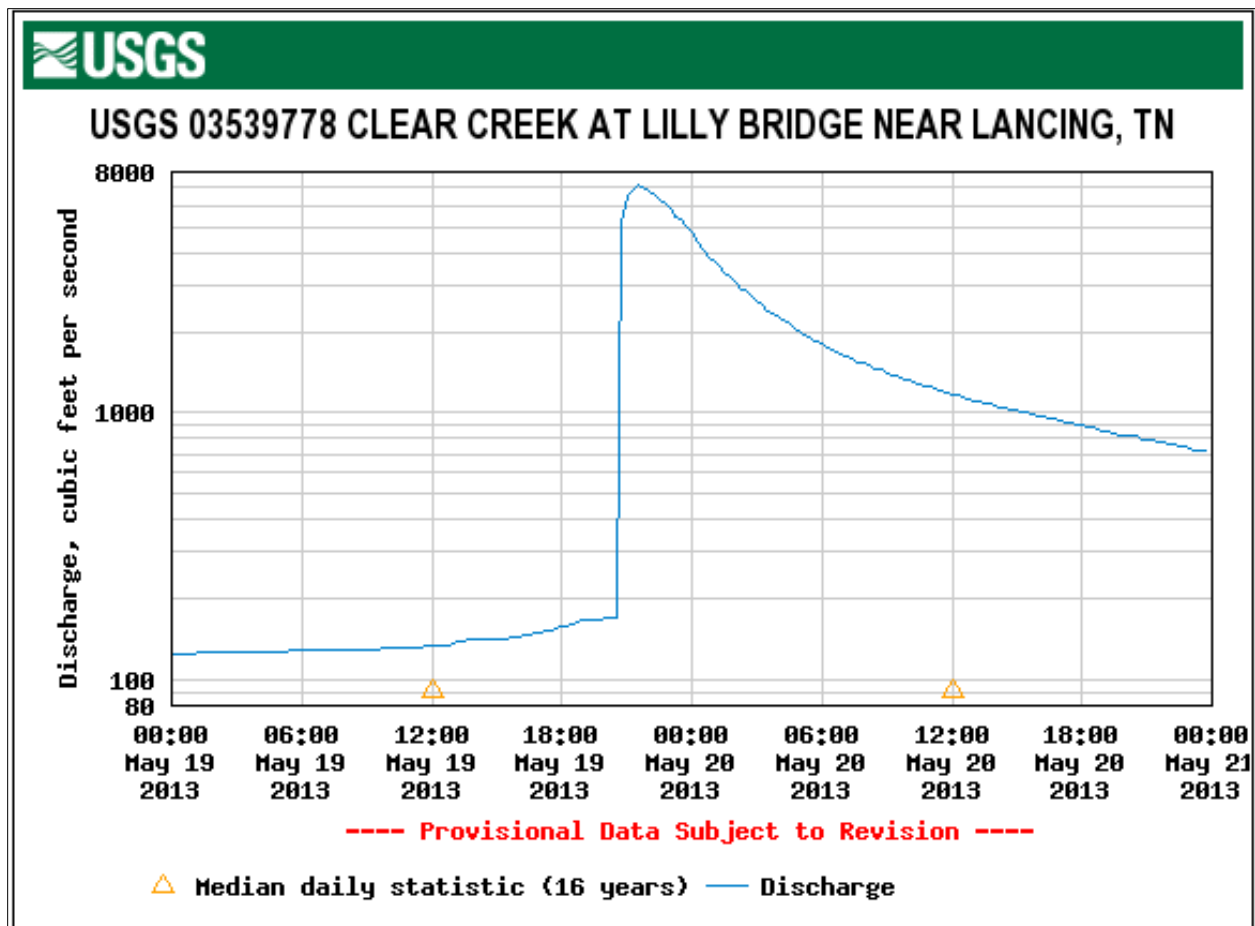


Figure SOP 1-1. Gage reading at Lilly Bridge, Clear Creek (OBRI) on 19 May 2013, showing a 5,000 cubic feet per second (cfs) increase in flow between 8:30 and 8:45 p.m. (the flood peaked within the hour at over 7000 cfs).

Thunderstorms

Avoid dangerous storms that produce strong winds and lightning. If caught in a lightning storm, seek shelter in a building or car as soon as possible. If no shelter is available, spread out and move to an open space. Squat low to the ground on the balls of your feet with your hands on your knees (do **not** lie flat on the ground). Avoid high elevations, conductive materials, and tall structures such as trees or telephone poles. If you are in the open and feel your hair stand on end (indicating lightning is about to strike), immediately make yourself the smallest target possible and minimize contact with the ground.

***Note:** A person struck by lightning can often be revived by prompt administration of cardiopulmonary resuscitation (CPR) and oxygen.*

Excessive Heat and Sun

Overexposure to heat and sun can cause dehydration, heat exhaustion, or heat stroke. All are serious conditions that can be life threatening and should be avoided. When working in hot weather, drink plenty of water and eat foods that replace electrolytes. Wear loose and light colored clothing,

including a hat to block the sun's rays. It may help to shift the field schedule to avoid working outside during the hottest part of the day.

Warning: Signs of heat stroke include hot, red, or spotted (usually dry) skin, and the sufferer may be mentally confused, delirious, convulsing, or unconscious. If you suspect heat stroke, seek immediate medical attention.

Precursors of heat stroke include heat cramps and heat exhaustion. The symptoms for both are:

- Heat cramps—the cause of heat cramps is initial exposure to high temperatures or physical exertion. Signs and symptoms of heat cramps usually include excessive sweating, fatigue, thirst, and cramps, usually in the stomach, arms, or legs. This condition is common in very hot weather or with moderate to heavy physical activity. You can usually treat heat cramps by drinking water or fluids containing electrolytes (e.g., Gatorade or other sports drinks), resting, and getting to a cool spot, like a shaded or air-conditioned area.
- Heat exhaustion—heat exhaustion occurs when you do not act on the signs and symptoms of heat cramps and your condition worsens. Signs and symptoms of heat exhaustion include headache, dizziness, lightheadedness, nausea, skin that feels cool and moist, and muscle cramps. Often with heat exhaustion, you can treat the condition yourself by following the same measures used to treat heat cramps, such as drinking cool, nonalcoholic beverages, getting into a cooler, shaded or air-conditioned area, or immersing yourself in cool water. If your symptoms persist, seek medical attention immediately.

Poor Air Quality

Summer ozone and particulate matter levels occasionally exceed federal health standards. Young children, seniors, and those suffering from asthma, chronic bronchitis, chronic obstructive pulmonary disease or heart problems are especially sensitive to poor air quality and should minimize outdoor activity when poor air-quality warnings are posted. The risks of occasional exposure to ozone and fine particulate matter are minimal for healthy individuals. When poor air-quality warnings occur, it is advisable for crews to avoid overly strenuous activity during the hottest part of the day (pollution levels tend to be lowest early in the morning) and to stick to lower elevations under a forest canopy.

To check local air-quality forecasts or learn more about health risks of air pollution, visit the [AIRNow intergovernmental agency website](#).

Ticks

Several species of ticks are common in Cumberland Plateau park units. These include the deer tick (*Ixodes scapularis*), which is a known vector for Lyme Disease and Ehrlichiosis; the lone star tick (*Amblyomma americanum*), which can carry pathogens that cause Ehrlichiosis and Tularemia; and the American dog tick (*Dermacentor variabilis*), a vector for Rocky Mountain Spotted Fever and Tularemia. Take the precautions outlined below to minimize the chances of having an embedded tick, which could lead to illness:

- Clothes treated with permethrin are a fairly effective tick repellent. Therefore, crew members will be provided with permethrin and encouraged to treat their clothing with permethrin periodically throughout the summer. Crew members should carefully follow the application instructions on the spray bottles to ensure their safety. Repellent will remain active for several weeks and through several washings.
- Crew members should take additional precautions to protect themselves from ticks, including tucking pants in socks and tucking in shirts. Wearing long sleeves and gaiters has been found to help.
- Check clothes and skin for ticks at the end of every field day. Ticks typically need to be embedded for at least 24 hours for disease transmission to occur (4–6 hours for the American dog tick to transmit the bacteria that causes Rocky Mountain Spotted Fever); therefore, the earlier ticks are found and removed, the lower your chances are of acquiring a tick-borne illness.
- If you find a tick that is already embedded, use fine-tipped tweezers to firmly grasp the tick close to your skin. Slowly and steadily pull the tick's body away from your skin. Be careful not to crush the tick's body—this will minimize the chance that the tick will regurgitate fluids into the wound. Clean the bite area with soap and water once the tick is removed.
- If you receive a tick bite, fill out a complete record on the tick log (z:\Safety\Ticklog.xls). If you start to notice symptoms, file a workers' compensation report as soon as possible.
- Keep an eye out for any early symptoms of tick-borne diseases. Symptoms may include a bull's eye rash around the tick bite (this does not always occur), tingling or numbness in extremities, a spotted rash on extremities, bad headaches, high fever, muscle and joint aches, stiff neck, fatigue, or swollen glands. If you develop a combination of these symptoms soon after a tick bite, seek medical attention. If you have any unusual reaction to a tick bite, many physicians advise treating with antibiotics, regardless of the outcome of diagnostic tests for Lyme disease (which are often inaccurate). Early treatment is easier and more effective than treatment after the disease has become entrenched.

Chiggers

Chiggers are the larval form of a type of mite in the Trombiculidae family. They live on vegetation and are commonly found close to the ground surface, as they require a high level of humidity for survival. Chiggers are barely visible to the naked eye (they measure less than 1/150th of an inch). They insert their feeding structures into the skin and secrete enzymes that cause destruction of host tissue. Hardening of surrounding skin cells results in the formation of a feeding tube called a stylostome. The itching caused by chigger bites is due to the presence of the stylostome and is usually most intense within one to two days after the bite. Symptoms include pronounced itching and a reddened, sometimes raised, area around the bite. Chigger bites themselves do not produce any long-term complications. However, because of the intense itching, prolonged scratching may cause skin wounds that can be infected by bacteria. Prevention and treatment measures include:

- Wash with soap and water after outdoor activity to remove any chiggers that may be migrating on the skin and prevent their bites. Likewise, wash any clothing worn outdoors to kill any chiggers remaining on the clothing.
- Pay attention to the outdoor temperature. Chiggers do not bite at colder temperatures (below 60°F [15.5°C]). You will not find chiggers in areas hotter than 99°F (37.2°C), so hot rocky areas on sunny days can provide chigger-free seats.
- As with mosquito bites, proper outdoor clothing can help prevent chigger bites. Long pants and long-sleeved shirts as well as thick socks and high shoes or boots can help prevent infestation. Tuck pant legs into shoes or boots if possible. All mosquito repellents (such as DEET), applied to skin and clothing, are effective at repelling chiggers.
- Direct treatment for chigger bites toward relieving the itching and inflammation. Use Calamine lotion and corticosteroid creams or diphenhydramine (Benadryl) spray to control itching. You may also use oral antihistamines, such as diphenhydramine, for symptom relief.

Mosquitos

Encephalitis is a mosquito-borne viral disease. Eastern Equine Encephalitis occurs predominantly in the eastern half of the United States. Because of the high case fatality rate, it is regarded as one of the more serious mosquito-borne diseases in the U.S. West Nile virus (WNV) is also a potentially serious illness. Experts believe WNV is a seasonal epidemic in North America that flares up in the summer and continues into the fall. Most often, WNV is spread by the bite of an infected mosquito.

The easiest and best way to avoid Encephalitis and WNV is to prevent mosquito bites. Field personnel should wear protective clothing, take precautions from dusk to dawn when mosquitoes are most likely to bite, and control standing water that can provide mosquito breeding sites. Field personnel should use insect repellent containing Meta-N,N-diethyl-meta-toluamide (DEET) or other EPA-registered active ingredient (U.S. Center for Disease Control, 2016). Follow the directions on the package. For more, see [CDC Reference](#).

Dangerous Plants and Animals

For safety and protection of park resources, it is never advisable for crew members to eat wild plants while working in a national park, regardless of their confidence in plant identification. Crew members should also keep a safe distance from wildlife and never handle potentially dangerous wildlife.

Poison Ivy

Poison ivy (*Toxicodendron* spp.) is present in APHN parks and can be abundant in localized areas. Abundance of poison ivy is not a justification for excluding a plot. However, if a crew member is susceptible to extreme allergic reactions to poison ivy, they should avoid working in infested areas, and all gear that has been near poison ivy should be carefully cleaned. When working in areas with poison ivy, it is advisable that crew members take precautions to avoid skin contact with any part of the poison ivy plant. Using a pre-exposure cream and wearing long sleeves and long pants, hats, and work or rubber gloves can help reduce the amount of skin contact with the plant. If needed, use

poison ivy wipes after contact. Crew members should not rub their faces when working around poison ivy. After working in an area with poison ivy, crew members should gently wash exposed skin in cool water with specially formulated poison ivy soap and change into fresh field clothes. At the end of a field day, crew members should also wash potentially contaminated equipment (e.g., quadrat, DBH tape). If a crew member has a minor allergic reaction, use the provided cream. If a severe allergic reaction occurs, the crew member should seek medical attention, notify the supervisor as soon as possible, and file a workers' compensation claim.

Bees/Wasps

It is important to be prepared for any possible effects from an insect sting. Most stings will only result in a temporary injury—pain, swelling, and skin redness around the sting. Sometimes the effects can be more severe— even life-threatening, depending on where you are stung and what allergies you have. If you have experienced a severe allergic reaction to an insect sting in the past, you will likely experience a similar or worse reaction if stung again. Doctors will prescribe a bee sting kit (self-injectable syringe containing epinephrine) to allergic people so they can carry the medication with them at all times. For people who are hypersensitive to stings, wearing a medical alert bracelet enables first responders to act promptly and appropriately to a sting victim who is unconscious. Employers should be notified if a worker, especially one who works outdoors, has allergies to insect stings. Co-workers should be trained in emergency first aid, be aware of the signs of a severe reaction, and know how to use the bee sting kit (self-injectable epinephrine). People who have been stung multiple times (such as when fleeing from a swarm or nest) can sometimes suffer serious health effects. While rare, death may occur. If you have been stung many, many times at once, talk to your doctor. You may need to have your health monitored over the next few days or weeks.

Wasps and hornets do not leave their sting in you so they can sting repeatedly. Honey bees can sting only once and will leave the stinger (and venom sac plus some other parts) stuck in the skin at the sting site. The stinger, if present, should be removed right away since the venom can still be injected for up to a minute after the bee detaches from its sting. Try removing the stinger by scraping sideways with your fingernail, a credit card or other stiff card. Try not to squeeze the bee venom sac, it will only release more venom. However, you might have to use tweezers if the venom sac breaks off leaving the sting in the skin. All stings hurt. A normal (or localized) reaction to the venom from a sting is redness of the skin, swelling, severe itching (pruritis), and a burning or stabbing pain. The longer the sting is in the skin, the more will be the effect of the venom being injected. An application of ice (wrapped in a towel to prevent freezing the skin), anti-itch cream or an antihistamine pill can help reduce the effects of the sting.

Bears

Seeing a bear in the wild is a special treat for any visitor to a national park. It is important to remember bears in national parks are wild and can be dangerous. Their behavior is sometimes unpredictable. Although rare, attacks on humans have occurred, inflicting serious injuries and death. Each bear and each experience is unique. No single strategy will work in all situations and guarantee safety. Most bear encounters end without injury. Following some basic guidelines may help to lessen the threat of danger. Your safety can depend on your ability to calm the bear.

Following viewing etiquette is the first step to avoiding an encounter with a bear that could escalate into an attack. Keeping your distance and not surprising bears are some of the most important things you can do. Most bears will avoid humans if they hear them coming. Pay attention to your surroundings and make a special effort to be noticeable if you are in an area with known bear activity or a good food source, such as berry bushes.

Once a bear has noticed you and is paying attention to you, additional strategies can help prevent the situation from escalating.

- **Identify yourself** by talking calmly so the bear knows you are a human and not a prey animal. Remain still. Stand your ground but slowly wave your arms. Help the bear recognize you as a human. It may come closer or stand on its hind legs to get a better look or smell. A standing bear is usually curious, not threatening.
- **Stay calm** and remember most bears do not want to attack you; they usually just want to be left alone. Bears may bluff their way out of an encounter by charging and then turning away at the last second. Bears may also react defensively by woofing, yawning, salivating, growling, snapping their jaws, and laying their ears back. Continue to talk to the bear in low tones; this will help you stay calmer, and it will not be threatening to the bear. A scream or sudden movement may trigger an attack. Never imitate bear sounds or make a high-pitched squeal.
- **Make yourselves look as large as possible** (for example, move to higher ground).
- **Do not drop your pack** as it can provide protection for your back and prevent a bear from accessing your food.
- If the bear is stationary, **move away slowly and sideways**; this allows you to keep an eye on the bear and avoid tripping. Moving sideways is also non-threatening to bears. Do **not** run, but if the bear follows, stop and hold your ground. Bears can run as fast as a racehorse both uphill and down. Like dogs, they will chase fleeing animals. Do **not** climb a tree. Both grizzlies and black bears can climb trees.
- **Leave** the area or take a detour. If this is impossible, wait until the bear moves away. Always leave the bear an escape route.
- **Be especially cautious if you see a female with cubs.** Never place yourself between a mother and her cub, and never attempt to approach them. The chances of an attack escalate greatly if she perceives you as a danger to her cubs.

Bear attacks are rare; most bears are only interested in protecting food, cubs, or their space. However, being mentally prepared can help you have the most effective reaction. Help protect others by reporting all bear incidents to a park ranger immediately. Above all, keep your distance from bears. If you are attacked by a black bear, **do not play dead**. Try to escape to a secure place such as a

car or building. If escape is not possible, try to fight back using any object available. Concentrate your kicks and blows on the bear's face and muzzle.

Bear pepper spray can be an important thing to carry when exploring the back country. It is used defensively to stop an aggressive, charging, or attacking bear. Although it is used in the same manner you would use mace on a person, bear pepper spray and human pepper spray are not the same. Make sure you select an EPA approved product specifically designed to stop aggressive bears. It is not a repellent so do not apply to your body or equipment. Check with the park to see if bear pepper spray is recommended or allowed for the activities you have planned.

Venomous Snakes

Two species of venomous snakes may occur in APHN parks: copperhead (*Agkistrodon contortrix*) and timber rattlesnake (*Crotalus horridus*). The rattlesnake has the more life-threatening bite. The best course of action is to avoid all snakes by keeping them at a safe distance. Pay attention to where you put your hands and feet, and be aware around rock piles and bedrock outcrops. Do not reach into crevices or put your feet into places where you cannot clearly see what is there. In thick vegetation, use a long stick to part the vegetation so you can see the ground. Wear snake leggings in thick vegetation where there could be significant numbers of venomous snakes. Should you receive a bite from a potentially venomous snake, move to a safe area, wash the bite area and dress the wound. Use a venom extractor within minutes to be effective. Immobilize the bite area with a splint, remove any rings, watches or other items that could constrict blood flow as the bite area swells, and immediately seek medical attention. Remain calm, and if emergency services cannot reach you, walk slowly to a place where you can be picked up. Note that many snake bites are purely defensive and contain no venom. Bites from immature snakes are much more likely to contain a more dangerous amount of venom than bites from adult snakes.

Vehicle Safety

Responsibilities of NPS Vehicle Operators

Crew members are responsible for inspecting their vehicles before every use to ensure the vehicles are in safe working condition. This includes visually checking tire pressure, adjusting mirrors, and making sure equipment is secure. Crew members must perform preventative maintenance in a timely manner (e.g., having oil changed by a qualified mechanic) and report any potential hazards or needed repairs to their supervisor.

Rules that must be followed when operating an NPS vehicle:

- Everyone in a government vehicle is required to wear a seat belt.
- Texting and other cell phone uses while driving are strictly prohibited. If you must answer or make a call, first pull over in a safe spot off the road.
- Only NPS employees or authorized cooperators and contractors are allowed to operate a government vehicle.
- Individuals who are not NPS employees, authorized cooperators or contractors, or other authorized individuals on government business, are not allowed to ride in a government vehicle.
- Drivers must adhere to all federal and state vehicle regulations, including all posted speed limits.

Trailer towing precautions

- Towing a trailer or equipment with your vehicle requires additional planning, caution, and proficiency in driving.
- Vehicles and trailers vary in maximum load capacity. Do not exceed the maximum recommended load capacity. (Check owner's manuals or contact vehicle or trailer manufacturers for this information.)
- Vehicles and trailers must be compatible and have a matching hitch ball and coupling.
- Trailers are required to have standard safety equipment such as safety chains (placed in an "x" under the coupling), lights, brakes (if applicable), and load-securing devices. Be aware that air turbulence from passing vehicles can cause your trailer to sway.
- Drive slower when towing. Maintain extra following and stopping distance to allow for the increased load. Balance loads.
- Disengage the vehicle's automatic "overdrive gear" option when towing.

Procedures for reporting a motor vehicle accident

Instructions and forms are in the vehicle's glove compartment and include the following: SF91—Motor Vehicle Accident Report; SF94—Statement of Witness, and SF95—Claim for Damage, Injury, or Death. In case of a motor vehicle accident, use the following procedures:

- Stop immediately.
- Take steps to prevent another accident at the scene.
- Call a doctor or ambulance if necessary.
- Notify police if outside the park. If inside the park, notify a ranger.
- **Do not sign any paper or make any statement** as to who was at fault (except to your supervisor or to a federal government investigator).
- Get the name and address of each witness. Ask each witness to complete a Standard Form 94, Statement of Witness, contained in the envelope in the vehicle's glove compartment.
- State your name, address, place of employment, name of your supervisor, and upon request show your operator's permit.
- Complete Standard Form 91, Motor Vehicle Accident Report (or reporting form required by your agency) at the scene. If conditions prevent this, make note of the following:
 - Registration information for other vehicle(s), owner's name, tag number and state, vehicle description and serial number
 - Information on other driver (name, address, operator's permit number, and expiration date)
 - Name and address of each person involved and extent of injury, if any
 - Name and address of company insuring other vehicle(s) and insurance policy number
 - General information such as location, time, weather, damage, etc.
- As soon as possible, notify your supervisor and the chief of Resource Management.
- Submit all reports and data to your supervisor within one working day.
- Process injuries through your agency personnel office using the [Department of Interior Safety Management System website](#) to submit reports online.

Chemical Safety

Conductivity and pH sensors on APHN datasondes are calibrated with a chemical solution. Material Safety Data Sheets (MSDS) for these solutions are kept on file. These liquids are generally classified as non-toxic, non-corrosive and non-flammable. Contact with eyes or skin may cause irritation. Flush irritated eyes or skin with water for 15 minutes. Ingestion may cause nausea or diarrhea and should be treated by dilution, such as drinking water. Seek medical attention if symptoms persist. Inhalation may cause irritation, requiring removal of the affected person from the exposure area and possible medical assistance.

The National Park Service must follow applicable federal, Department of Transportation (DOT), Environmental Protection Agency (EPA), and supplemental state guidelines when transporting chemicals and chemical wastes. Chemical transportation guidelines are summarized in the following paragraphs.

The National Park Service will transport small quantities of chemicals for use in field and office laboratory procedures. The National Park Service is not considered a commercial carrier which, by definition, transports materials in commerce or in the furtherance of a commercial enterprise (transporting for profit).

Because the National Park Service transports small quantities of chemicals and wastes, the EPA and DOT small-quantity exemption rules apply. According to these guidelines, the National Park Service is exempt from many industry handling and shipping regulations and training requirements. Check your state's laws on intrastate transport of small quantities of chemicals in a federal government vehicle.

It is not necessary to placard your vehicle when transporting small quantities of chemicals. Placarding a vehicle informs enforcement and emergency response personnel the vehicle contains large amounts of the material indicated on the placard. *(For their own safety, first-response teams might not immediately approach a wrecked vehicle that is placarded for a highly dangerous or reactive material.)*

Safe Containment and Transport of Chemicals

- Protect yourself and passengers in the vehicle by stowing and securing chemicals away from the passenger compartment and behind a safety screen or barrier.
- Avoid unnecessary exposures and spills. Never place chemical containers where they can be knocked over.
- Try to transport chemicals in their original DOT-approved shipping containers with the package correctly sealed. If the original packaging is not available, use a container that will resist and contain the material in the event of an accident. *Use of an overpacked container, such as an ice chest, is recommended to further protect against breakage and spills.*
- Carry spill kit(s) appropriate for the chemicals being transported.

- Label packages as to their contents and remove old, inappropriate labels from containers that are being reused.
- Keep a chemical inventory list in the glove box or side door pocket of the vehicle. This list should also have an emergency contact name and phone number. Keep a copy of each chemical's MSDS here as well.
- Transport waste products in the same safe and approved manner as other hazardous materials. The container must be of adequate composition and strength and labeled with the type and concentration(s) of chemical(s).

Chemical and waste disposal requirements and exemptions are federally regulated by the EPA. You must also follow supplemental state guidelines. Contact your safety officer or waste disposal representative for details and follow these general disposal guidelines:

- Do not indiscriminately dump chemicals or pathogens down sinks, toilets, or drains, and **do not discard wastes into the environment.**
- Do not let chemical wastes accumulate in your vehicle, office, or laboratory. Waste disposal storage areas should be established and used.
- Do not mix incompatible wastes. Waste disposal companies have strict and costly requirements for accepting mixed wastes.
- Always label the storage container of a waste product to indicate its contents.
- The dilute acid solution used for equipment cleaning can be prepared for safe disposal by following procedures described by Horowitz et al. (1994).

Appropriate Personal Protective Equipment

Select personal protective equipment (PPE) appropriate to the chemical(s) to be contacted. Personal protective equipment can be designed for specific chemicals. For example:

- Wear gloves that will provide adequate protection. Vinyl gloves are used for handling inorganic acids and bases. Latex gloves are used for handling relatively mild organic solvents, such as methanol and acetone. Nitrile gloves can be used for some stronger organic solvents.

Contaminated water

Water samples might be contaminated with pathogens or hazardous chemicals. Use caution and extra protection when working with water known or suspected to contain high concentrations of pathogens.

Waterborne, disease-causing organisms (pathogens) are found in nearly all surface-water systems and occur in some ground-water systems as well. Most pathogens originate from the body fluids and feces of animals and humans. Pathogens enter surface-water resources primarily through sewage

discharges and spills, storm and agricultural runoff, and direct contact. Microorganisms are also transported on small particles such as dust or aerosols (gaseous suspension of very fine particles). Pathogens enter ground water through infiltration from septic tank effluent, leachate from fields and ponds, and from faulty well seals and casings. Bacteria, viruses, and other pathogenic organisms can occur in the most pristine environments.

To minimize exposures to and effects from contaminated water:

- Never drink sample water, no matter how pristine the environment appears.
- Receive required inoculations. Contact your safety officer about receiving appropriate inoculations before you sample.
- Use personal protective equipment, including respiratory equipment (certification required) when working over turbulent, polluted flows, and in shelters containing evidence of excrement (see Water Resource Division [WRD] Memorandums 94.30 and 95.06 (USGS, 1994, USGS, 1995)). Pathogens can enter your body through many openings such as your mouth, eyes, nose, cuts, scrapes, or chapped skin.
- Wear rubber boots, gloves, and splash protection (a disposable dust mask offers splash and dust protection at a very low cost).
- Do not ingest pathogens or other contaminants. Never eat or drink while sampling or put pencils or other items in your mouth.
- Carry antibacterial soap; wash before leaving the site. Remember to wash again after unloading supplies.
- Disinfect all contaminated surfaces as soon as possible.

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- U.S. Geological Survey (USGS). 2014. Safety and health for field operations. Handbook 445-3-H. Chapter 26. pp 303-304. Available at: <https://www2.usgs.gov/usgs-manual/handbook/hb/445-3-h.pdf> (last accessed December 2018).

Appendix A: Emergency Contact Information

APHN Program Manager

Brian Witcher

Cell: (828) 484-6331

Telephone: (828) 407-5654

Email: brian_witcher@nps.gov

APHN Hydrologist

Jim Hughes

Telephone: (423) 569-7315

Email: james_d_hughes@nps.gov

Radio Call Sign: 360

BISO Chief of Resource Management

Tom Blount

Telephone: (423) 569-7330

Email: tom_blount@nps.gov

Radio Call Sign: 301

BISO Botanist

Marie Kerr Tackett

Telephone: (423) 569-7323

Email: marie_tackett@nps.gov

Radio Call Sign: 331

BISO Acting Chief Ranger

Anthony Garner

Telephone: (423) 569-7305

Mobile: (423) 215-9880

Email: anthony_garner@nps.gov

Radio Call Sign: 631

BISO Safety Officer

David Pope

Telephone: (423) 569-7327

Email: david_pope@nps.gov

Radio Call Sign: 560

OBRI Natural Resource Specialist

Rebecca Schapansky

Telephone: (423) 346-8901 x 27

Email: rebecca_schapansky@nps.gov

Radio Call Sign: 630

OBRI Chief Ranger

Matt Hudson

Telephone: (423) 346-8901 x 22

Mobile: (423) 363-7102

Email: matt_hudson@nps.gov

Radio Call Sign: 640

BLRI Supervisory Resource Management Specialist

Bambi Teague

Asheville, NC

Telephone: (828) 348-3439

Email: bambi_teague@nps.gov

BLRI Chief Ranger:

Neal Labrie

Asheville, NC

Telephone: (828) 348-3426

Email: neal_labrie@nps.gov

BLRI Assistant Chief Ranger:

Debra Flowers

Asheville, NC

Telephone: (828) 348-3427

Email: debra_flowers@nps.gov

BLRI Communications Center (Dispatch):

Asheville, NC

Telephone: (828) 298-2491 or 1-800-PARKWATCH

BLRI Plant Ecologist:

Chris Ulrey

Asheville, NC

Telephone: (828) 348-3483

Email: chris_ulrey@nps.gov

Radio Call Sign: 631

BLRI Resource Management Specialist, Highlands District

Bob Cherry

Blowing Rock, NC

Telephone: (828) 348-3513

Email: bob_cherry@nps.gov

Radio Call Sign: 431

BLRI Resource Management Specialist, Pisgah District

Lillian McElrath

Spruce Pine, NC

Telephone: (828) 348-3546

Email: lillian_mcelrath@nps.gov

Radio Call Sign: 531

BLRI Resource Management Specialist, Plateau District

Tom Davis

Floyd, VA

Telephone: (540) 745-9663

Email: g_tom_davis@nps.gov

Radio Call Sign: 331

Table SOP 1A-1. Emergency Contact Numbers.

Agency or Facility	Phone Number
Big South Fork Medical Center	(423) 569-8521
Jamestown Regional Medical Center	(931) 879-8171
Scott County Sheriff (Huntsville)	(423) 663-2245
Fentress County Sheriff	(931) 879-8142
McCreary County Sheriff	(606) 376-2322
Scott County Ambulance	(423) 569-6000
Fentress County Ambulance	(931) 879-8147
McCreary County Ambulance	(606) 376-5062
Morgan County Sheriff	(423) 346-6262

Medical Facilities Near BISO and OBRI—Hospitals and Urgent Care Clinics

Compiled by Brian T. Watson, 2011 APHN Intern

Harriman

Ambulatory Care Center of Roane County

2497 S. Roane St. # 110

Harriman, TN 37748-8666

(865) 882-2909

Monday–Friday 8 a.m.–5 p.m.

Approximate coordinates:

35.894218, -84.617647

+35° 53' 39.18", -84° 37' 3.53"

UTM: 715021.7 E, 3974837.6 N; 16 S

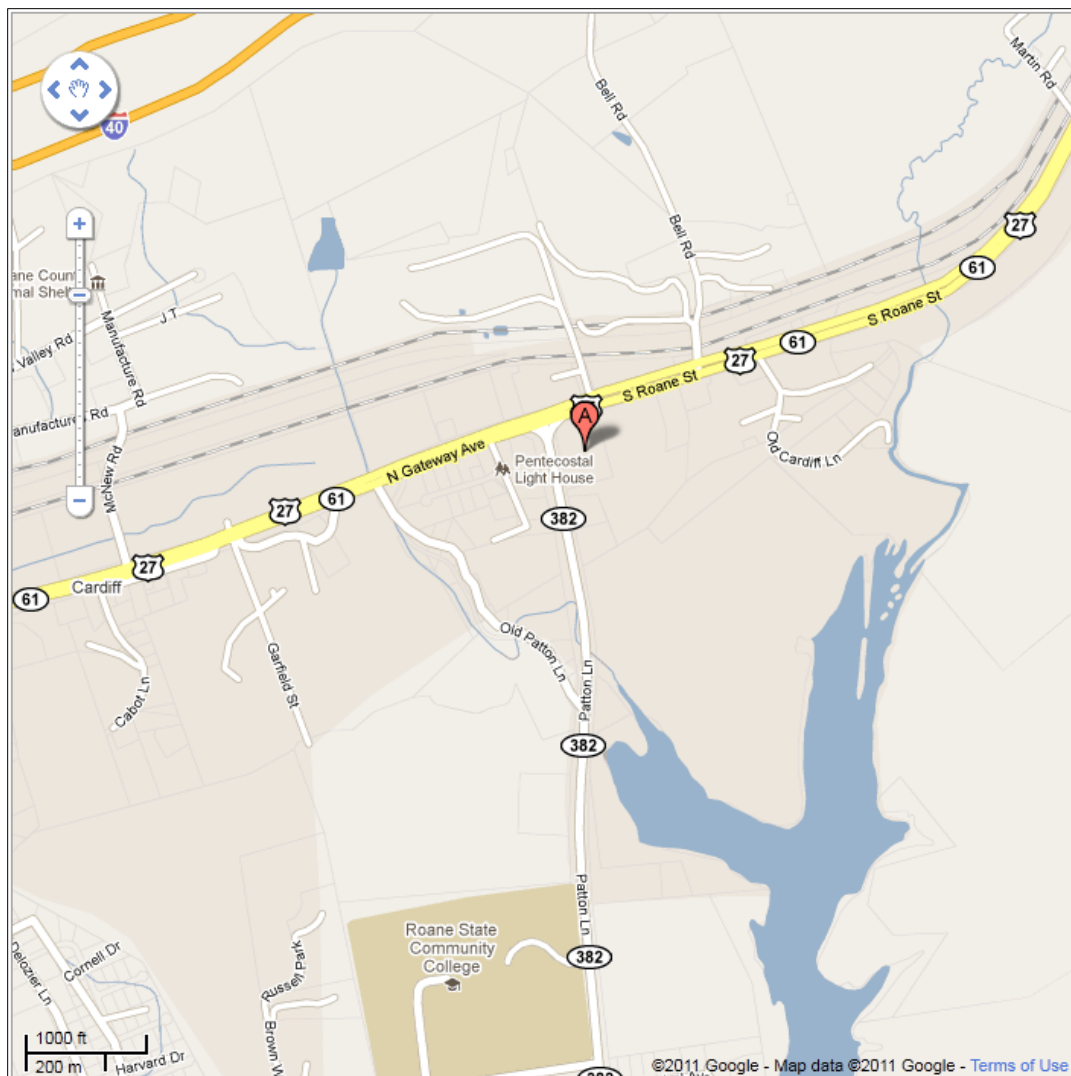


Figure SOP 1A-1. Location of Ambulatory Care Center of Roane County.

Roane Medical Center

412 Devonia Street

Harriman, TN 37748

(865) 882-1323

24 hours a day

Approximate coordinates:

35.934797, -84.551364

+35° 56' 5.27", -84° 33' 4.91

UTM: 720892.4 E, 3979487.6 N; 16 S



Figure SOP 1A-2. Location of Roane Medical Center.

Oneida

Ambulatory Care Center of Scott County

16050 Scott Highway

Oneida, TN 37841

(423) 286-3292

Monday–Friday 8 a.m.–5 p.m.

Approximate coordinates:

36.472324, -84.542854

+36° 28' 20.37", -84° 32' 34.27"

UTM: 720148.6 E, 4039145.2 N; 16 S

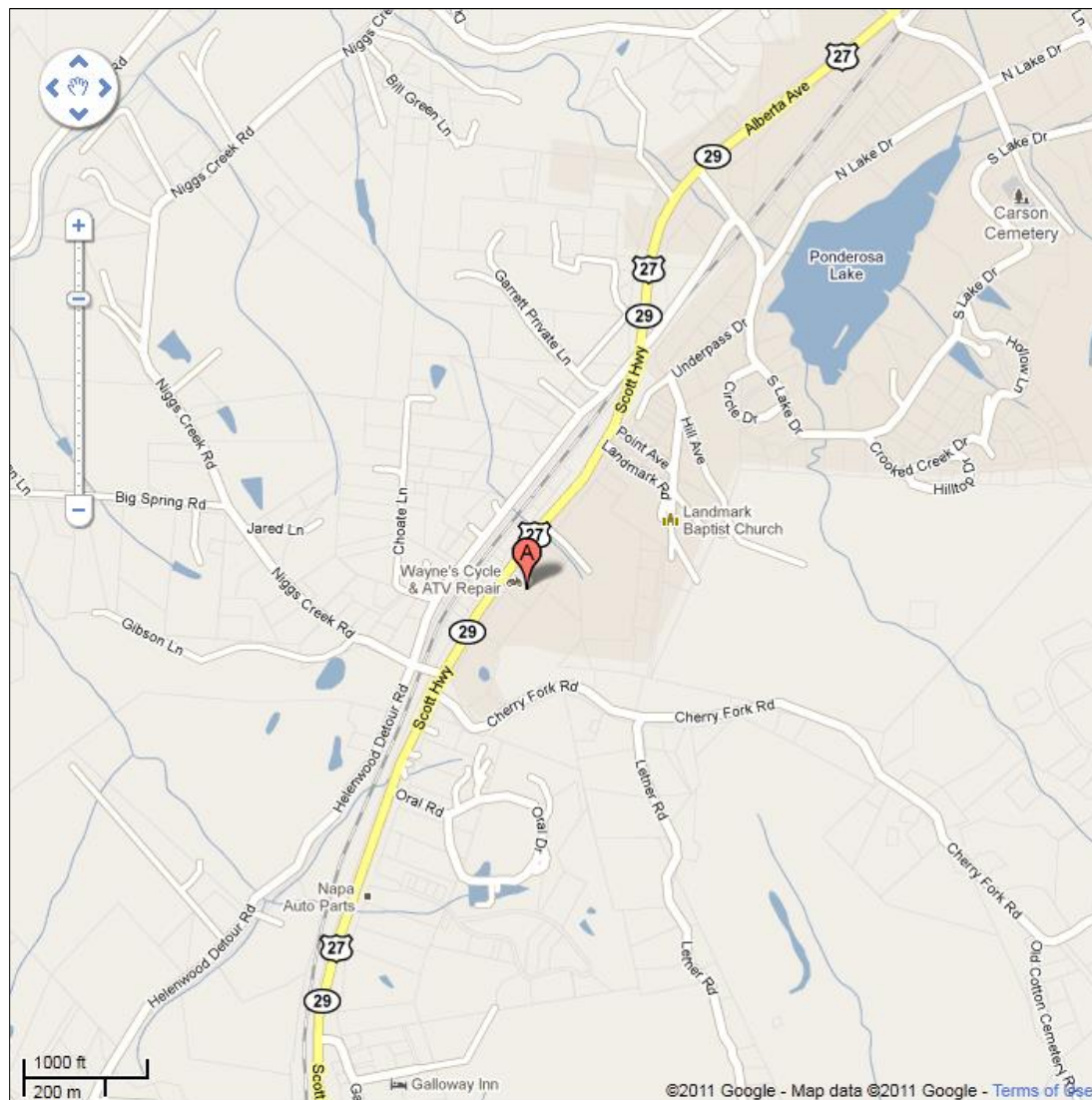


Figure SOP 1A-3. Location of Ambulatory Care Center of Scott County.

Jamestown

Jamestown Regional Medical Center

436 Central Avenue West

Jamestown, Tennessee 38556

(931) 752-5762

Open 24 hours a day

Approximate Coordinates:

36.431802, -84.943782

+36° 25' 54.49", -84° 56' 37.62"

UTM: 684318.3 E, 4033808 N; 16 S

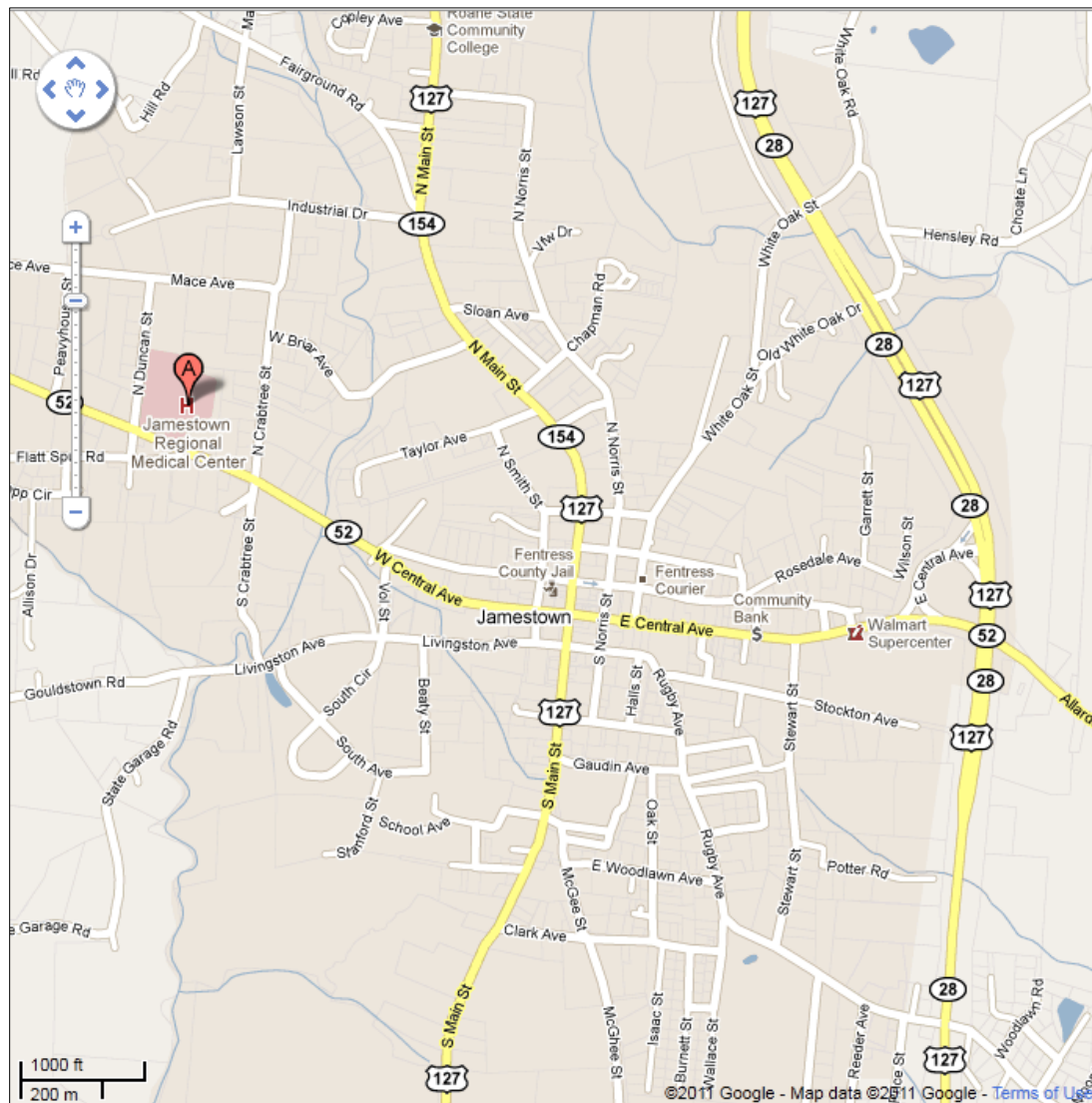


Figure SOP 1A-5. Location of Jamestown Regional Medical Center.

Oak Ridge

Park Med Urgent Care Center

115 B South Illinois Avenue

Oak Ridge, TN 37830

(865) 483-4040

Monday–Friday: 8 a.m.–6 p.m.

Saturday: 8 a.m.–2 p.m.

Approximate coordinates:

36.009093, -84.265916

+36° 0' 32.73", -84° 15' 57.30"

UTM: 746417.3 E, 3988415.1 N; 16 S

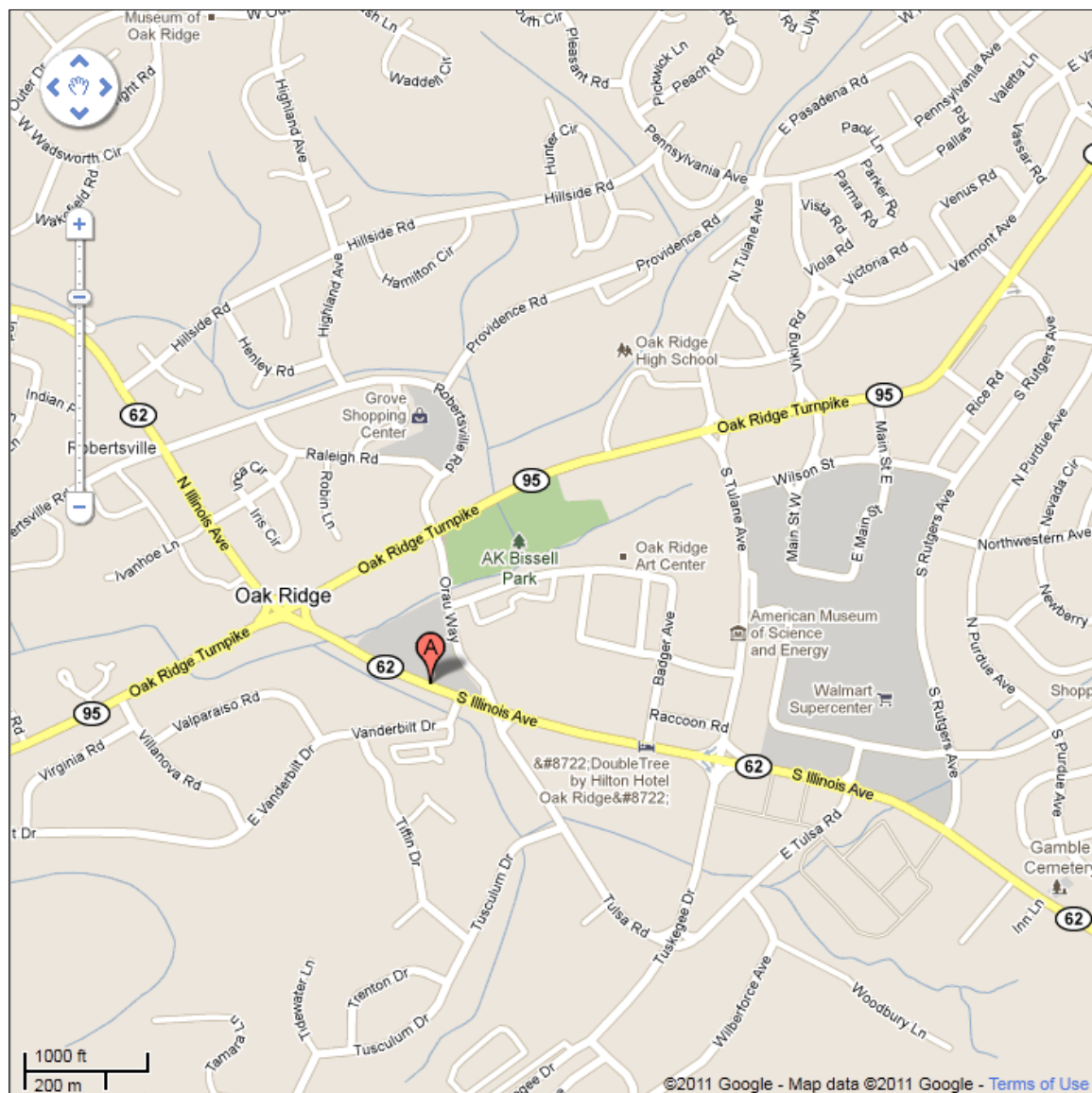


Figure SOP 1A-6. Location of Park Med Urgent Care Center.

Methodist Medical Center of Oak Ridge

990 Oak Ridge Turnpike

Oak Ridge, TN 37831

(865) 835-1000

Open 24 hours a day

Approximate coordinates:

36.024239, -84.242481

+36° 1' 27.26", -84° 14' 32.93"

UTM: 748482.4 E, 3990155.2 N; 16 S

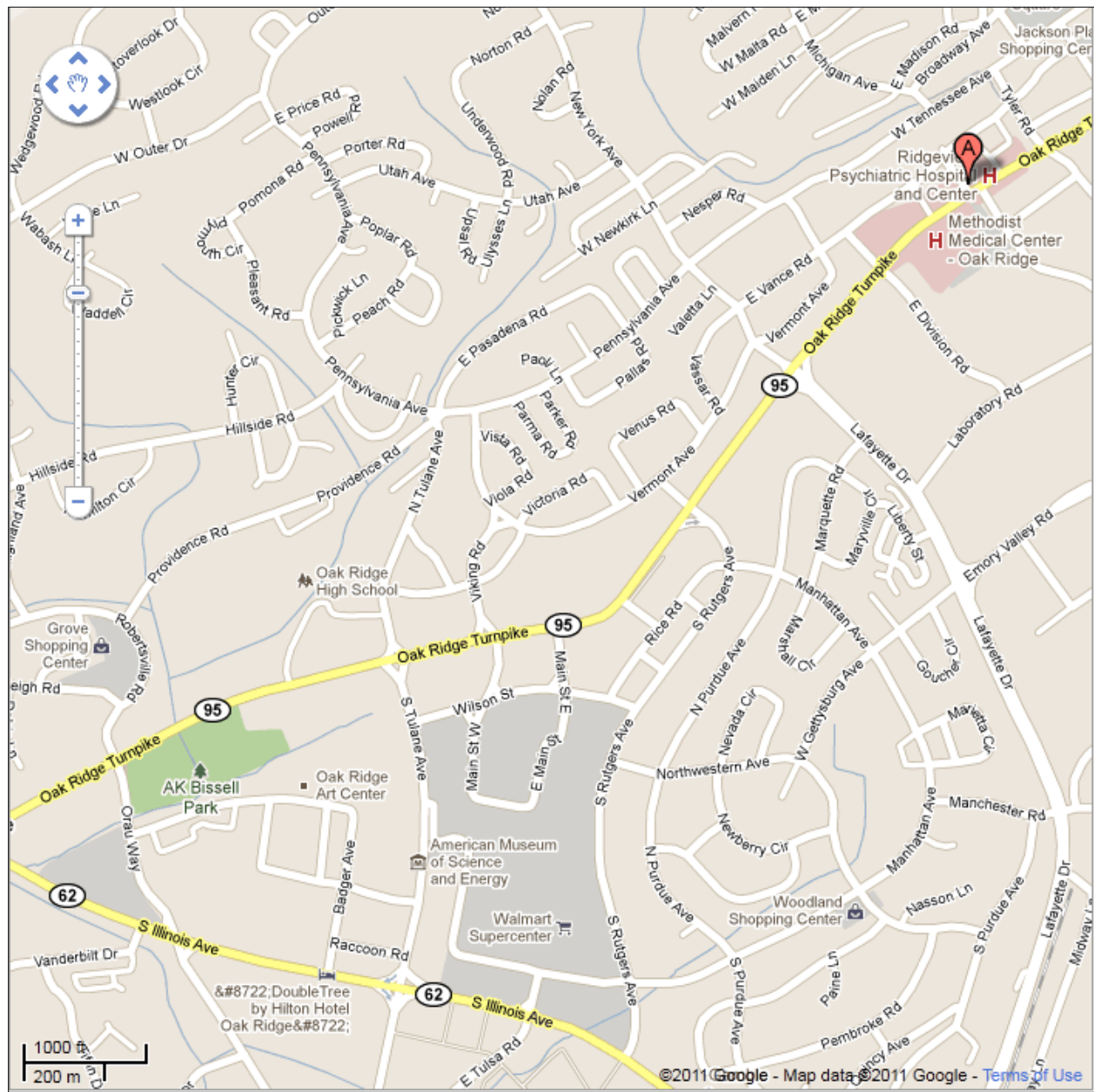


Figure SOP 1A-7. Location of Methodist Medical Center of Oak Ridge.

Wartburg

Ambulatory Care Center of Wartburg

1236 Knoxville Highway; PO Box 368

Wartburg, TN 37887

(865) 882-2909

Monday–Friday 8 a.m.–5 p.m. (stops accepting patients at 4)

Approximate coordinates:

36.103734, -84.580482

+36° 6' 13.44", -84° 34' 49.74"

UTM: 717799.4 E, 3998164.9 N; 16 S

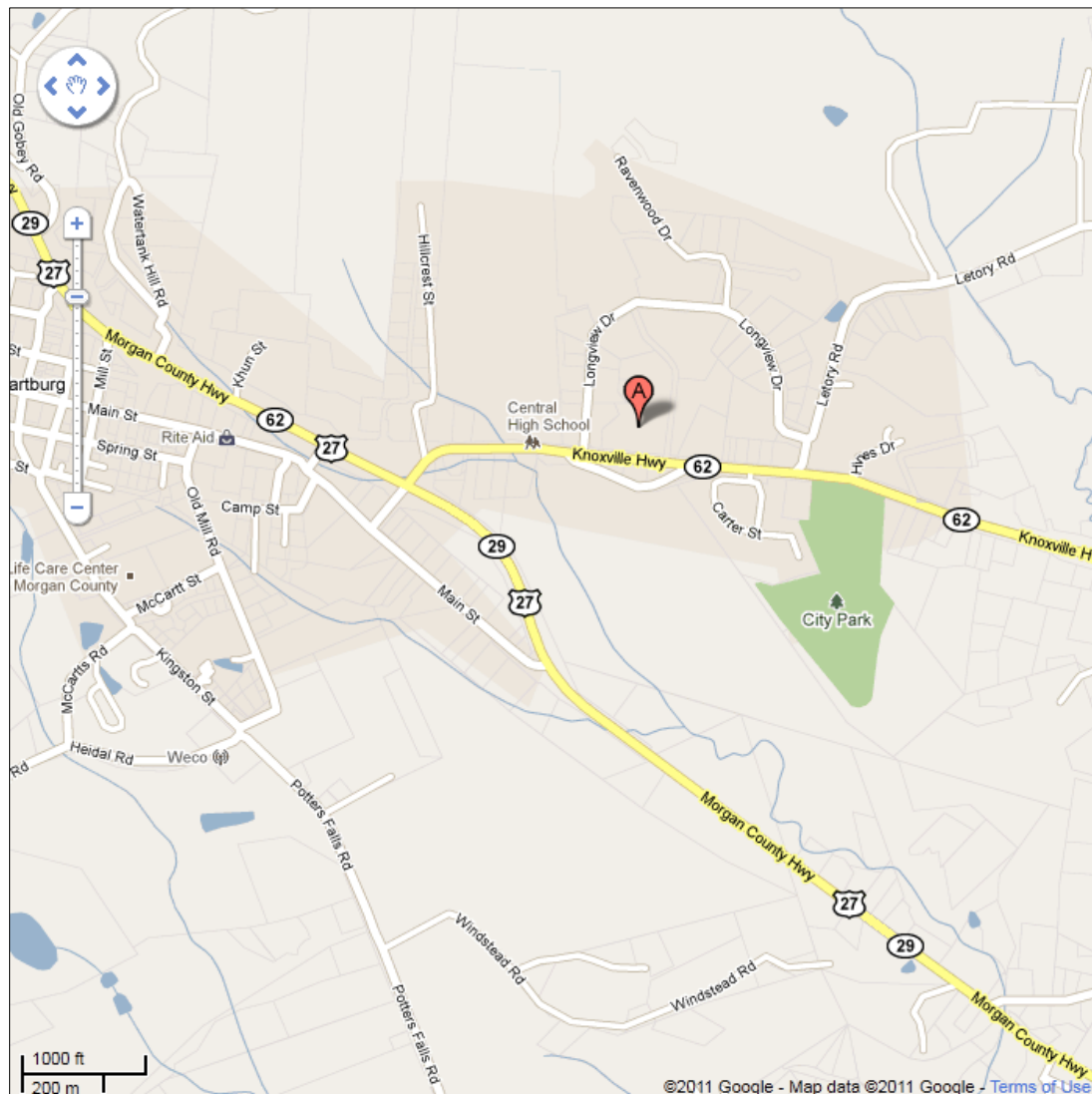


Figure SOP 1A-8. Location of Ambulatory Care Center of Wartburg.

Also, see Harriman Hospital and Oak Ridge Hospital facilities.

Whitley City, Kentucky

See Oneida, Tennessee

Knoxville, Tennessee

North Knoxville Medical Center (Tennova Healthcare)

7565 Dannaher Drive

Powell, TN 37849

(865) 859-8000

Open 24 hours a day

Approximate coordinates:

36.053523, -83.996637

+36° 3' 12.68", -83° 59' 47.89"

UTM: 230064.7 E, 3994041.7 N, 17S

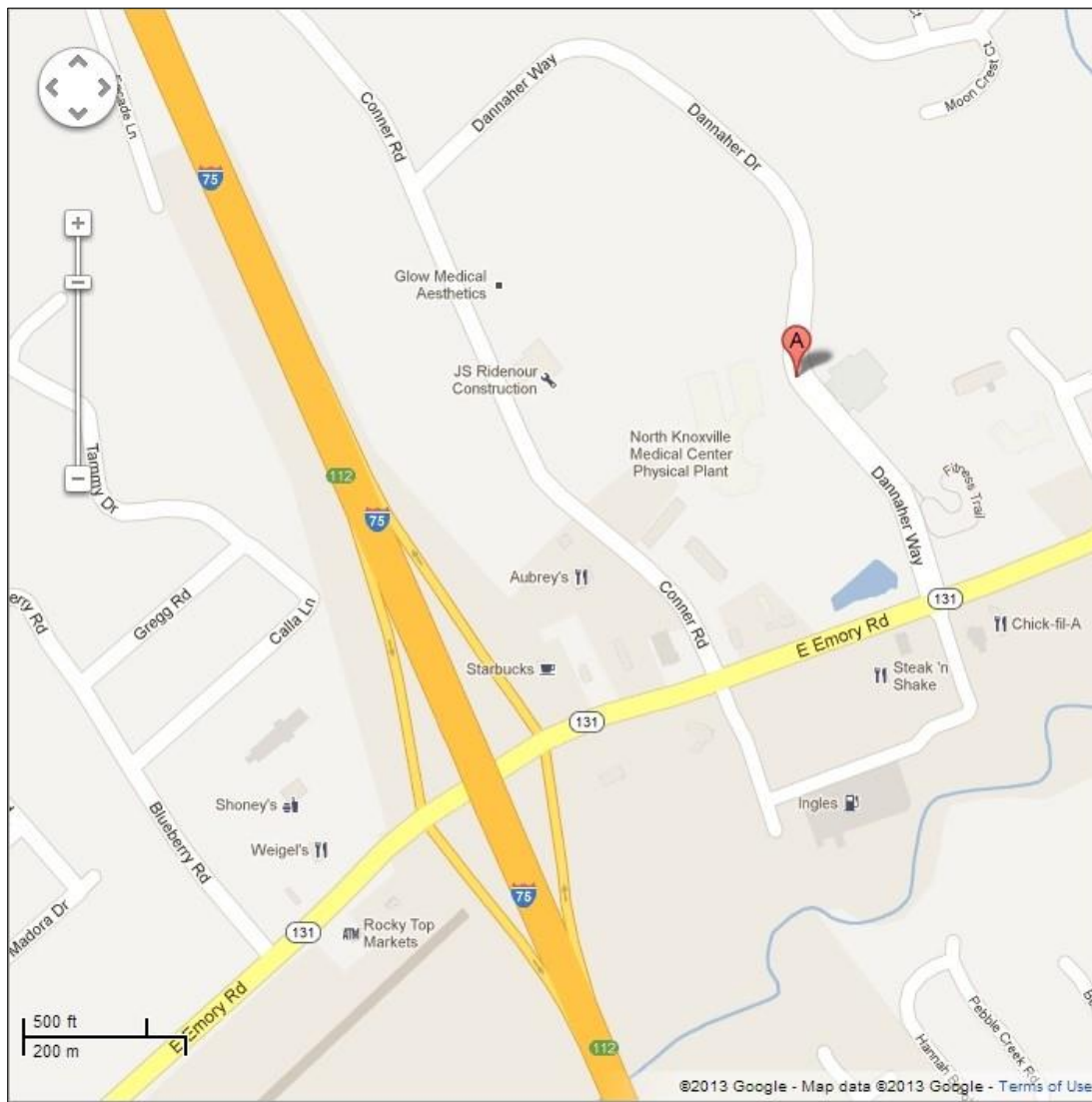


Figure SOP 1A-9. Location of North Knoxville Medical Center (Tennova Healthcare).

Medical Facilities near Blue Ridge Parkway: Hospitals and Urgent Care Clinics

Information correct as of November 2, 2016.

Milepost 0 (near Waynesboro, VA)

Augusta Health Urgent Care

1140 Keezletown Road

Weyers Cave, VA

(540) 453-0040

Weekdays 9:00 a.m.–7:00 p.m.; weekends 9:00 a.m.–5:00 p.m.

Approximate Coordinates:

38.285537, -78.912349

+38° 17' 7.93", -78° 54' 44.46"

UTM: 682586.7 E, 4239558.2 N; 17 S

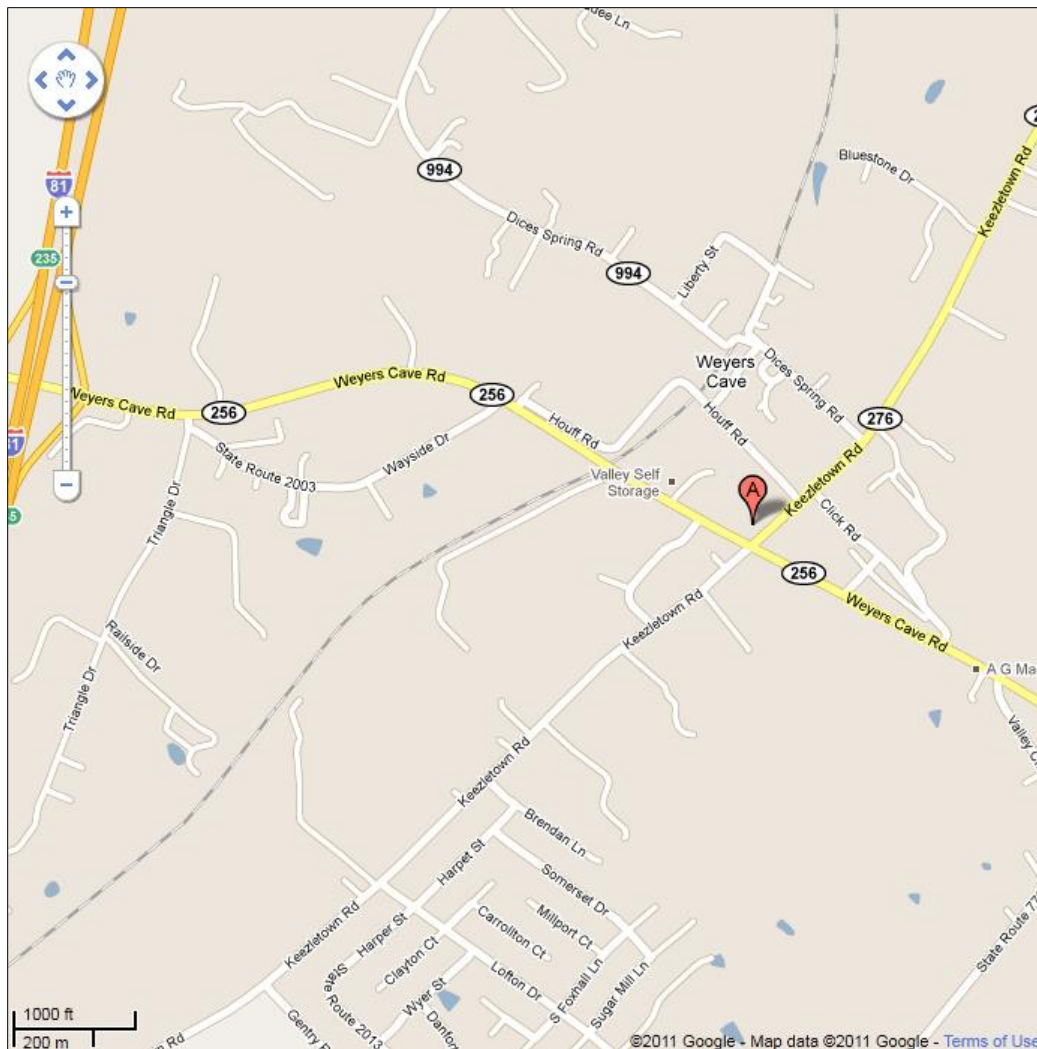


Figure SOP 1A-10. Location of Augusta Health Urgent Care (image from Google Maps).

Milepost 48 (near Buena Vista, VA)

Carilion Stonewall Jackson Hospital

1 Health Circle

Lexington, VA 24450

(540) 458-3300

Open 24 hours a day, 7 days a week

Approximate Coordinates:

37.779217, -79.440876

+37° 46' 45.18", -79° 26' 27.15"

UTM: 637300.6 E, 4182463.7 N; 17 S

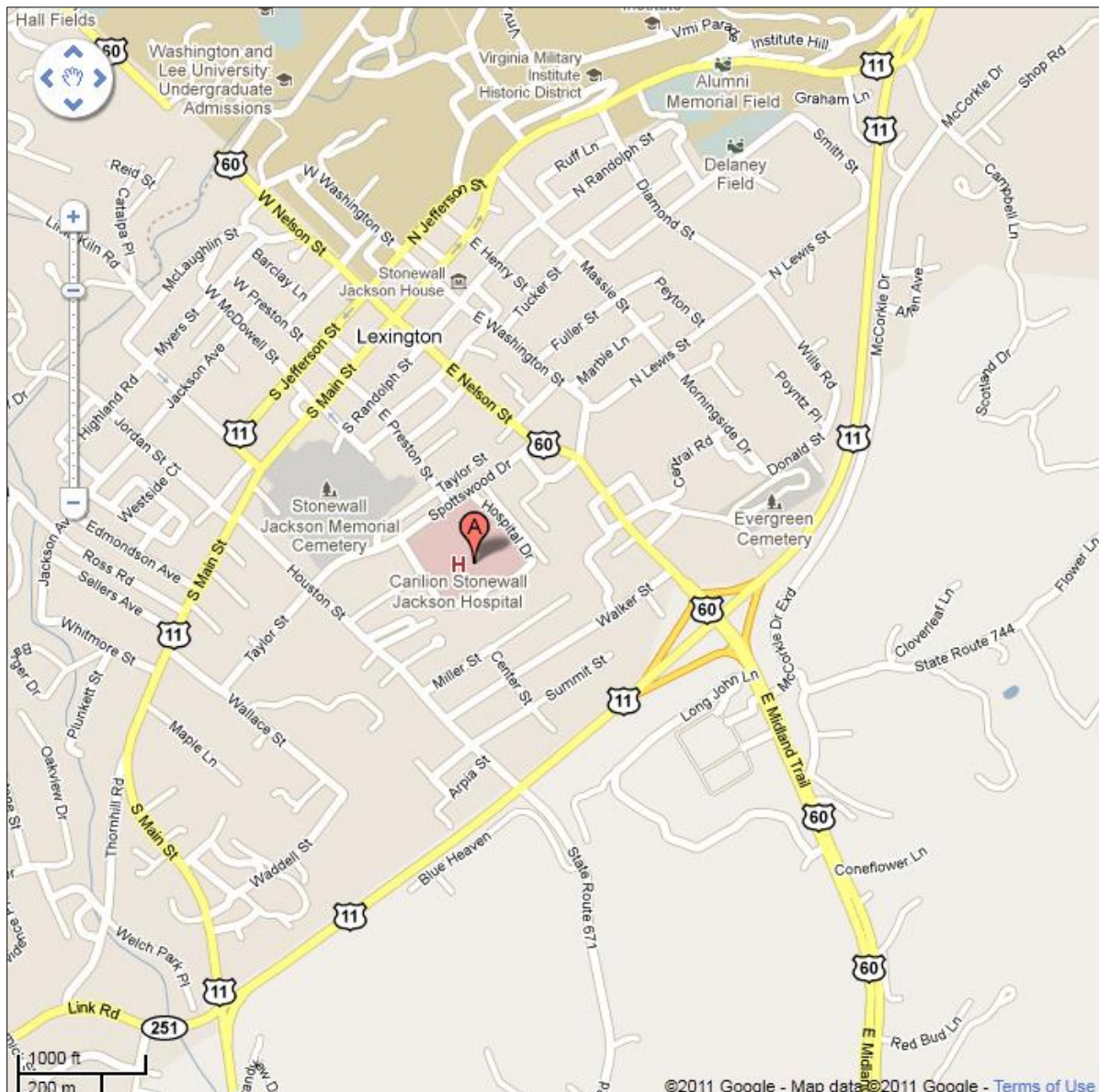


Figure SOP 1A-11. Location of Carilion Stonewall Jackson Hospital (image from Google Maps).

Milepost 65 (near Glasgow or Big Island, VA)

Centra Lynchburg General Hospital

1901 Tate Springs Road

Lynchburg, VA 24501

(434) 200-3000 or 1-877-MDLINK1

Open 24 hours a day, 7 days a week

Approximate Coordinates:

37.415680, -79.171304

+37° 24' 56.45", -79° 10' 16.69"

UTM: 661827.8 E, 4142556.1 N; 17 S

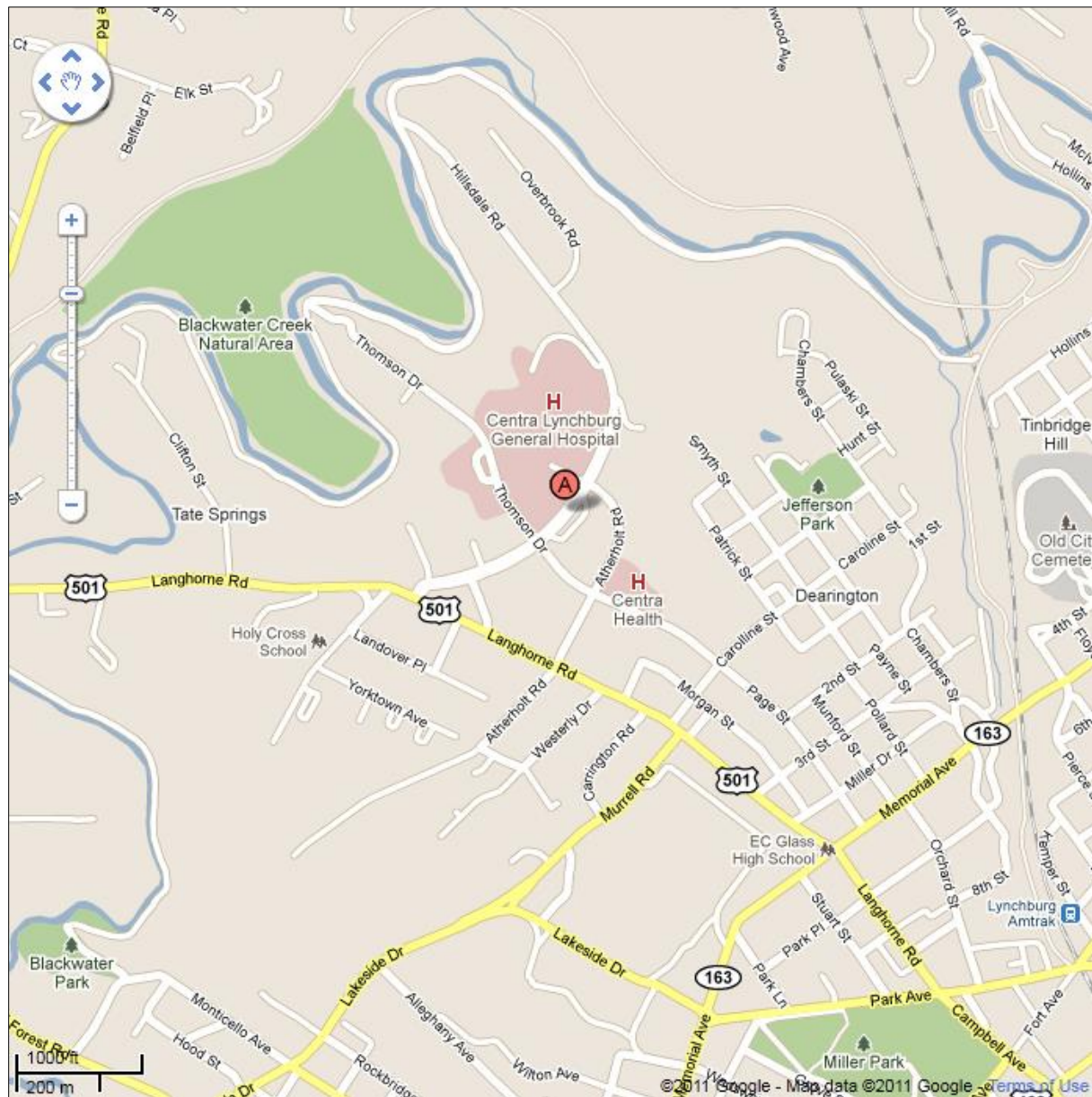


Figure SOP 1A-12. Location of Centra Lynchburg General Hospital (image from Google Maps).

Milepost 85 (near Bedford, VA)

Bedford Family Care

1368 American Way

Bedford, VA 24523

(540) 587-8612

Weekdays 8:00 a.m.–5:00 p.m.

*Appointments only, but will do day-of appointments

Approximate Coordinates:

37.326948, -79.501781

+37° 19' 37.01", -79° 30' 6.41"

UTM: 632736.8 E, 4132195.2 N; 17 S

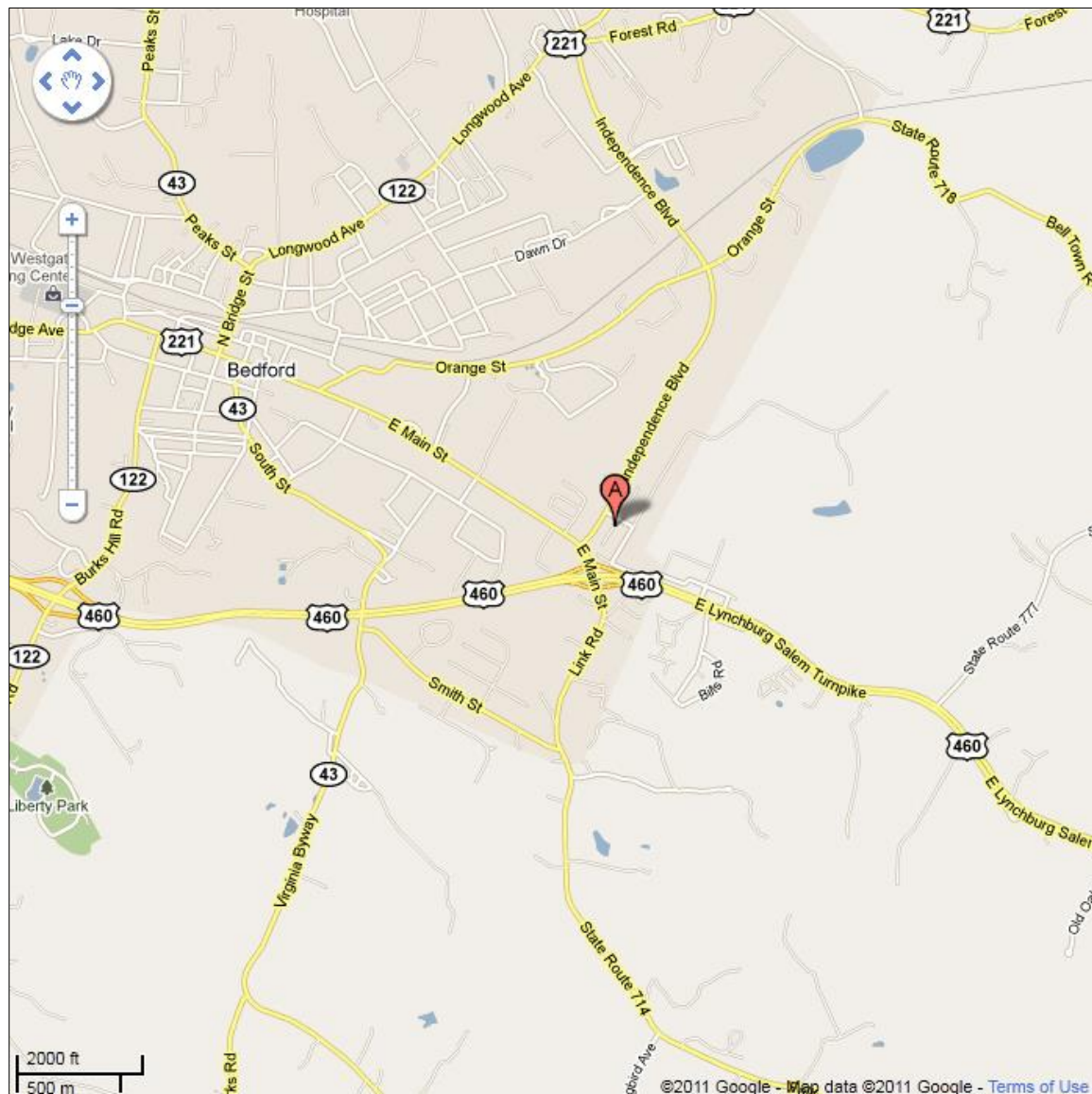


Figure SOP 1A-13. Location of Bedford Family Care (image from Google Maps).

Milepost 85 (near Bedford, VA) [cont.]

Central Bedford Memorial Hospital

1613 Oakwood St.

Bedford, VA 24523

(540) 586-2441

Open 24 hours a day, 7 days a week

Approximate Coordinates:

37.352186, -79.517158

+37° 21' 7.87", -79° 31' 1.77"

UTM: 631330.3 E, 4134973.9 N; 17 S

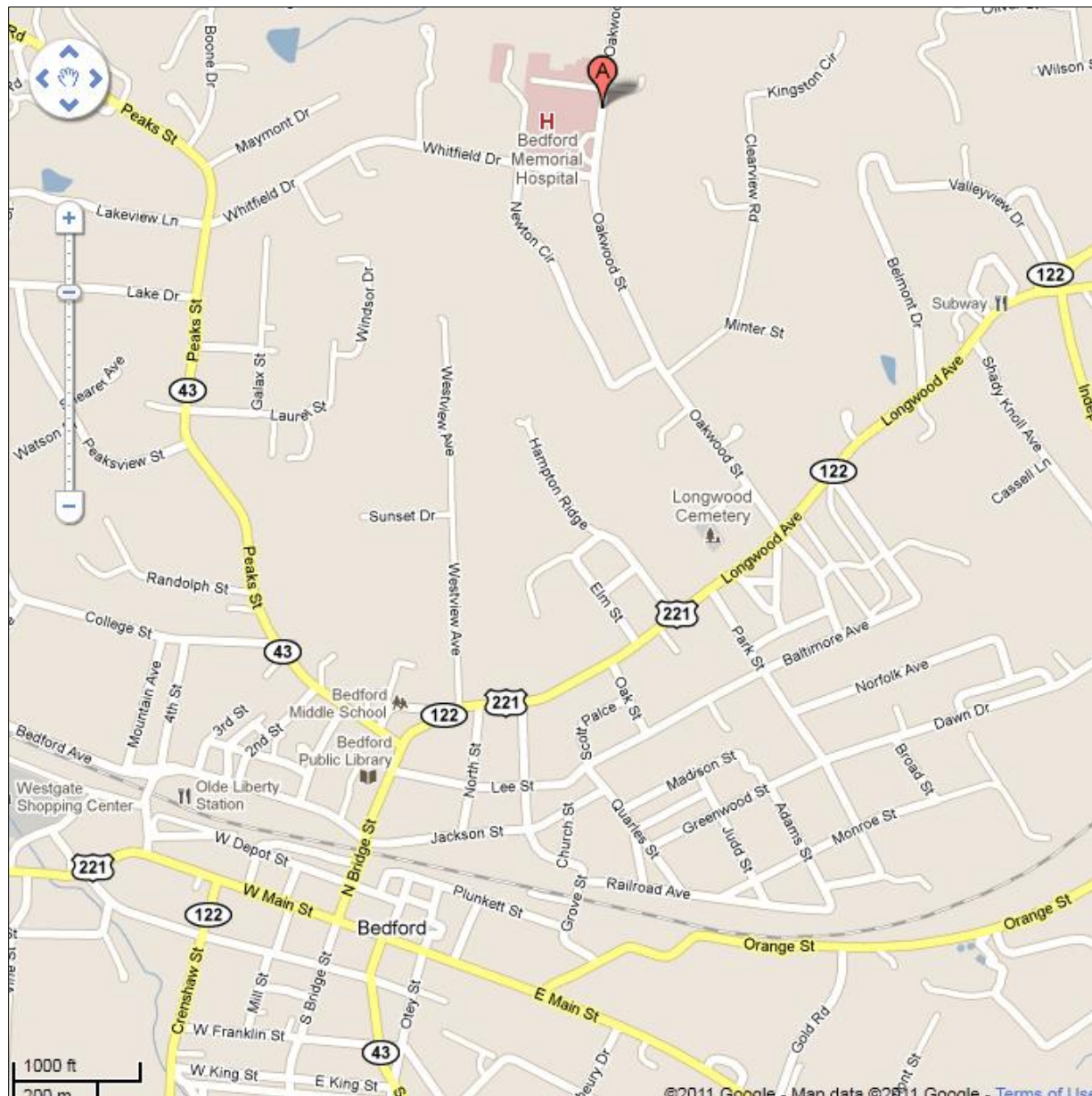


Figure SOP 1A-14. Location of Bedford Memorial Hospital (image from Google Maps).

Milepost 115 (near Roanoke, VA)

Note: There is a Carilion Roanoke *Community Hospital* and a Carilion Roanoke *Memorial Hospital* in Roanoke

Carilion Clinic Community Care

(part of Carilion Roanoke Community Hospital)

101 Elm Ave. SE

Roanoke, VA 24013

(540) 985-8044

8:00 a.m.–5:30 p.m.

**Minor injuries only; anything requiring diagnostics go to Roanoke Memorial Hospital*

Approximate Coordinates:

37.266585, -79.939207

+37° 15' 59.71", -79° 56' 21.15"

UTM: 594056.7 E, 4124973.4 N; 17 S

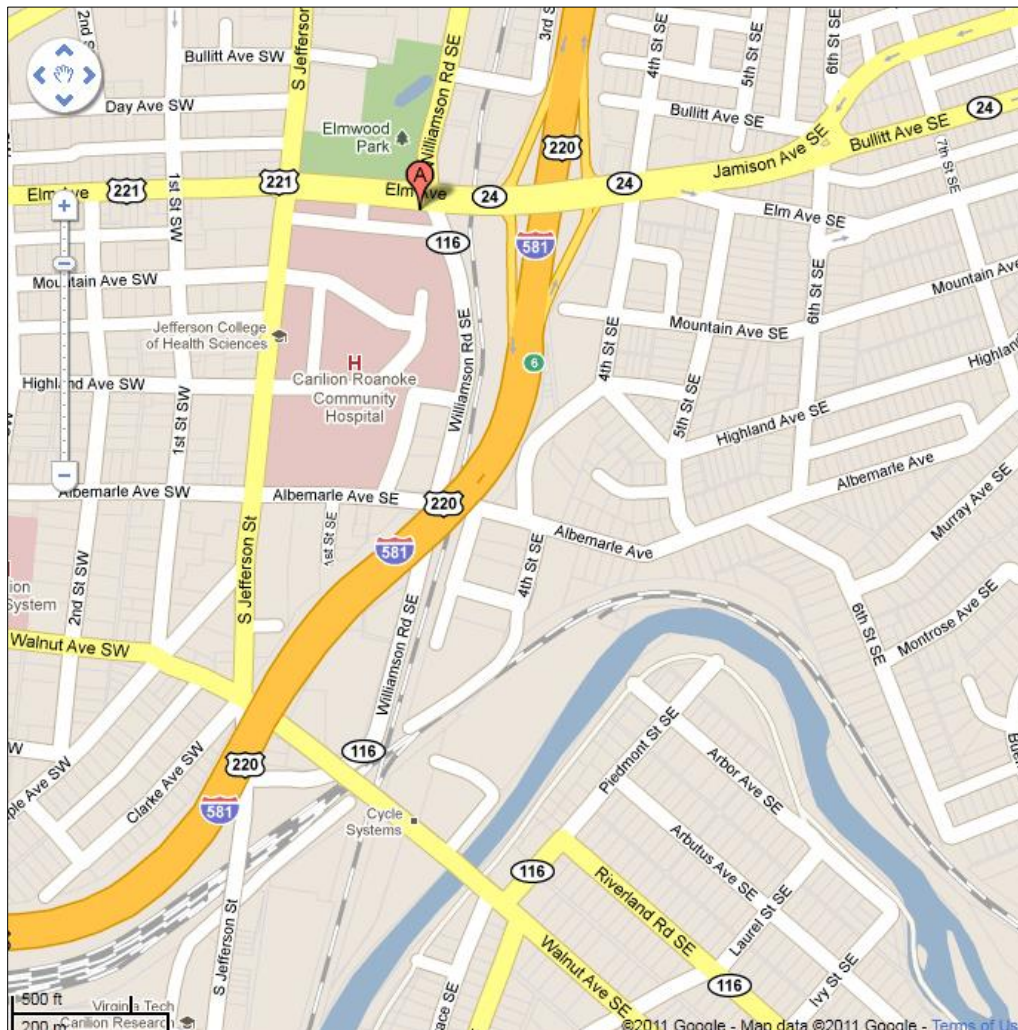


Figure SOP 1A-15. Location of Carilion Clinic Community Care (image from Google Maps).

Milepost 115 (near Roanoke, VA) [cont.]

Carilion Roanoke Memorial Hospital: Emergency Department

1906 Belleview Ave.

Roanoke, VA 24014

(540) 981-7337

Open 24 hours a day, 7 days a week

Approximate Coordinates:

37.252079, -79.942836

+37° 15' 7.48", -79° 56' 34.21"

UTM: 593752.3 E, 4123360.5 N; 17 S

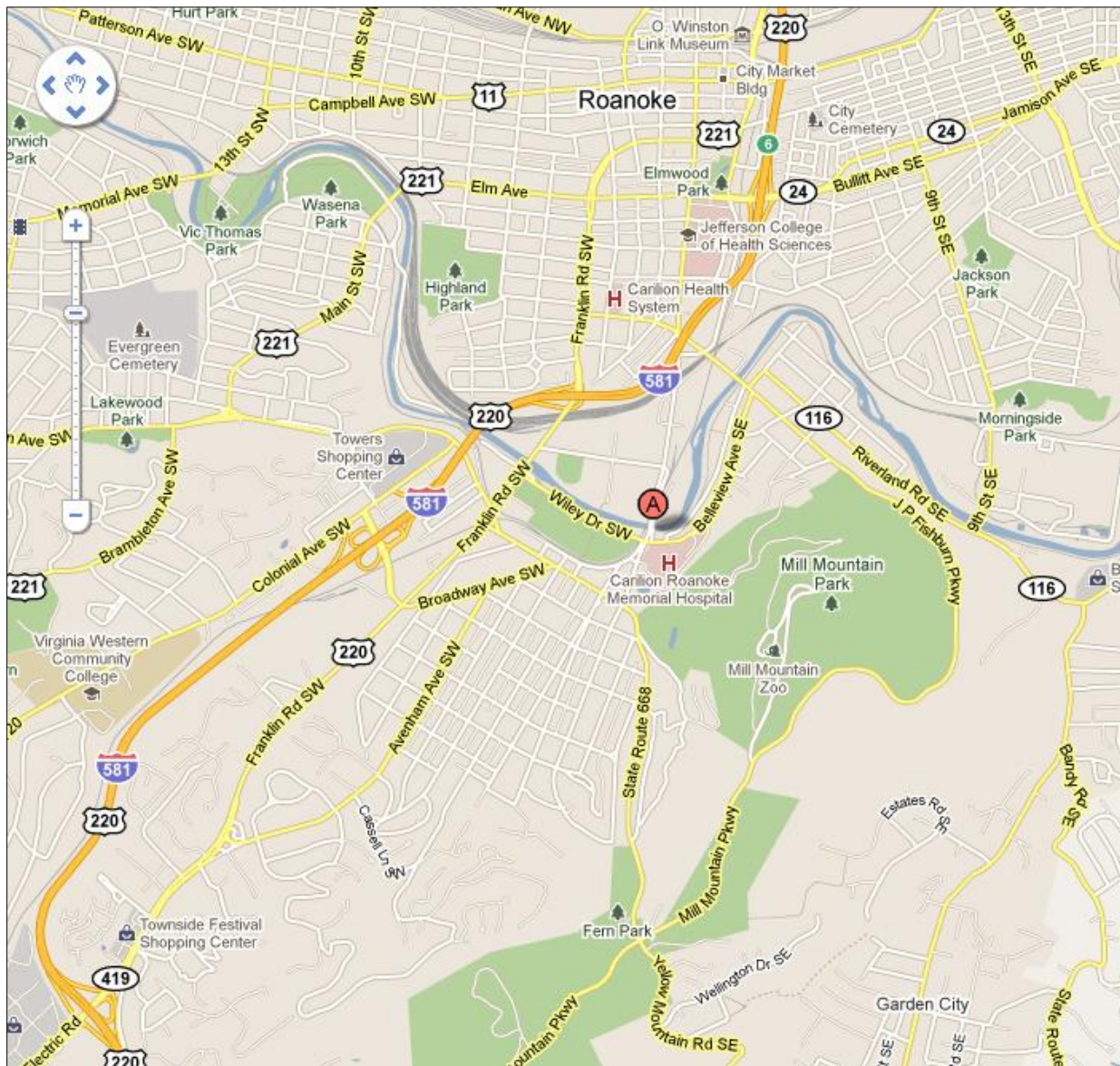


Figure SOP 1A-16. Location of Carilion Roanoke Memorial Hospital Emergency Department (image from Google Maps).

Milepost 160 (near Floyd, VA)

Carilion New River Valley Medical Center

2900 Lamb Circle

Christiansburg, VA 24073

(540) 731-2000

Open 24 hours a day, 7 days a week

Approximate Coordinates:

37.089389, -80.506872

+37° 5' 21.80", -80° 30' 24.74"

UTM: 543825.3 E, 4104902.4 N; 17 S

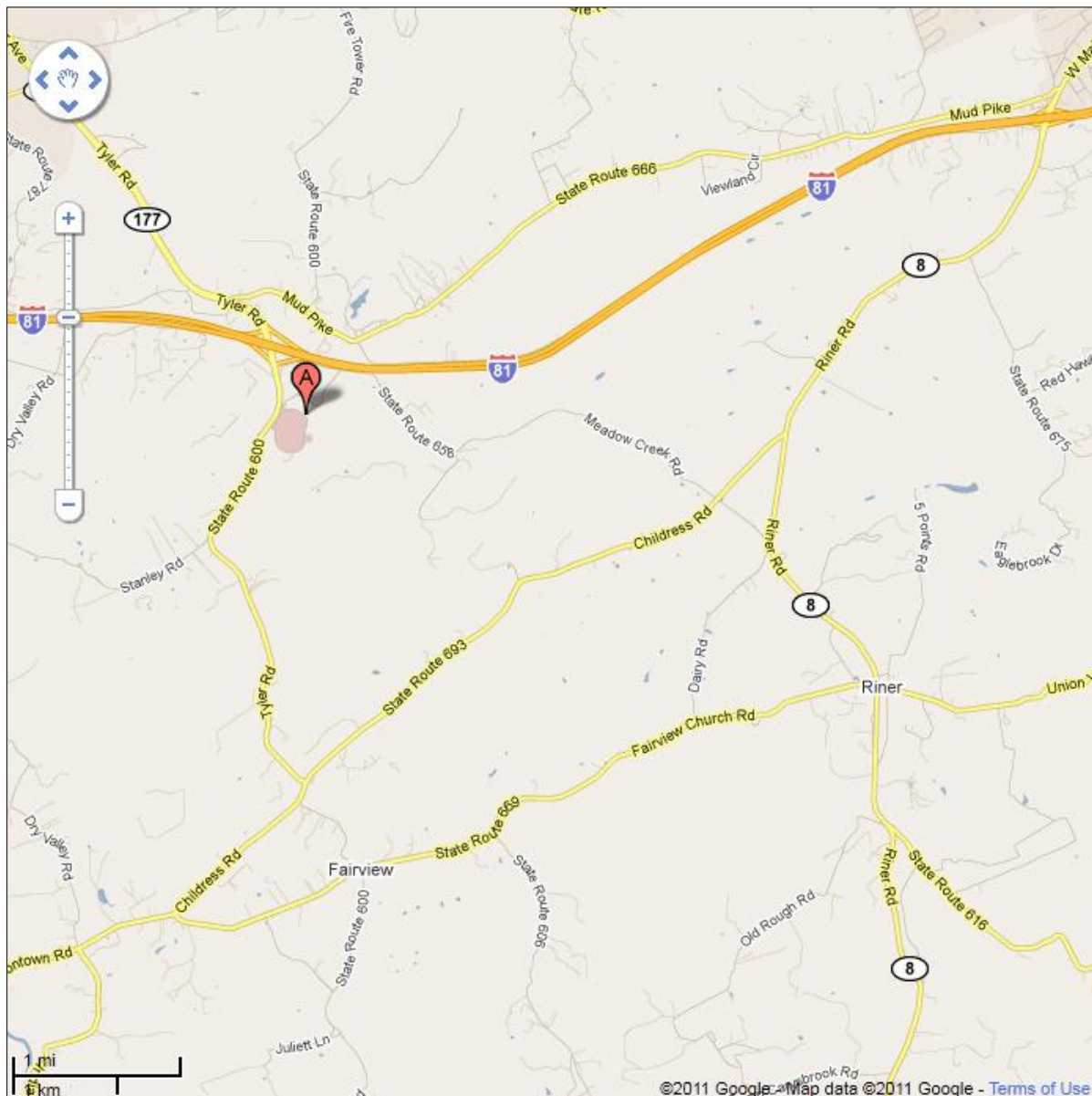


Figure SOP 1A-17. Location of Carilion New River Valley Medical Center (image from Google Maps).

Milepost 178 (near Meadows of Dan or Stuart, VA)

Pioneer Community Hospital of Patrick County

18688 Jeb Stuart Hwy

Stuart, VA 24171

(276) 694-8600

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.646999, -80.253927

+36° 38' 49.20", -80° 15' 14.14"

UTM: 566688.8 E, 4055973.2 N; 17 S

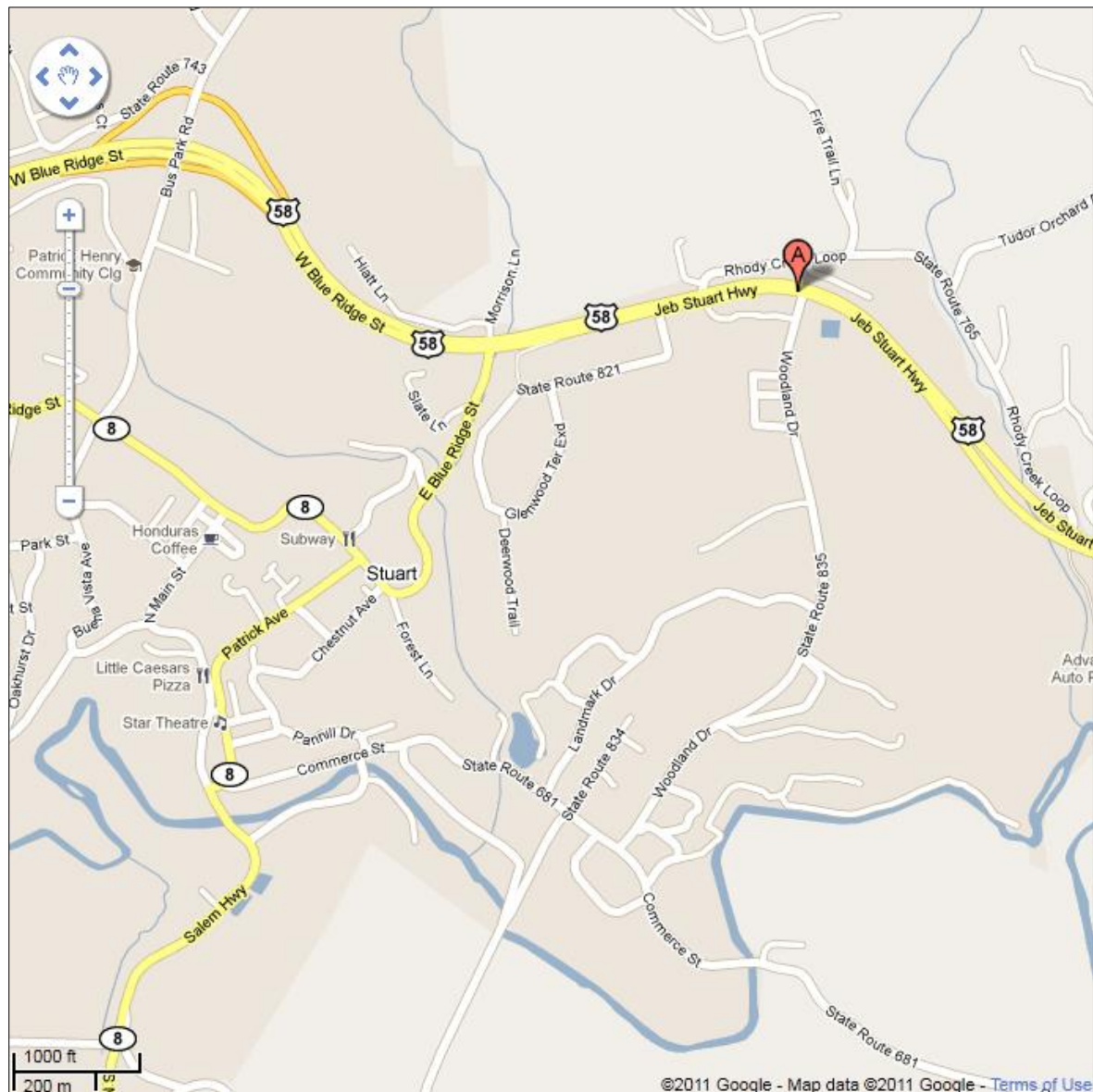


Figure SOP 1A-18. Location of Pioneer Community Hospital of Patrick County (image from Google Maps).

Milepost 200 (near Hillsville, VA or Mount Airy, NC)

Northern Hospital of Surry County

830 Rockford St

Mt Airy, NC 27030

(336) 719-7000

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.488373, -80.611843

+36° 29' 18.14", -80° 36' 42.63"

UTM: 534766.8 E, 4038188.4 N; 17 S

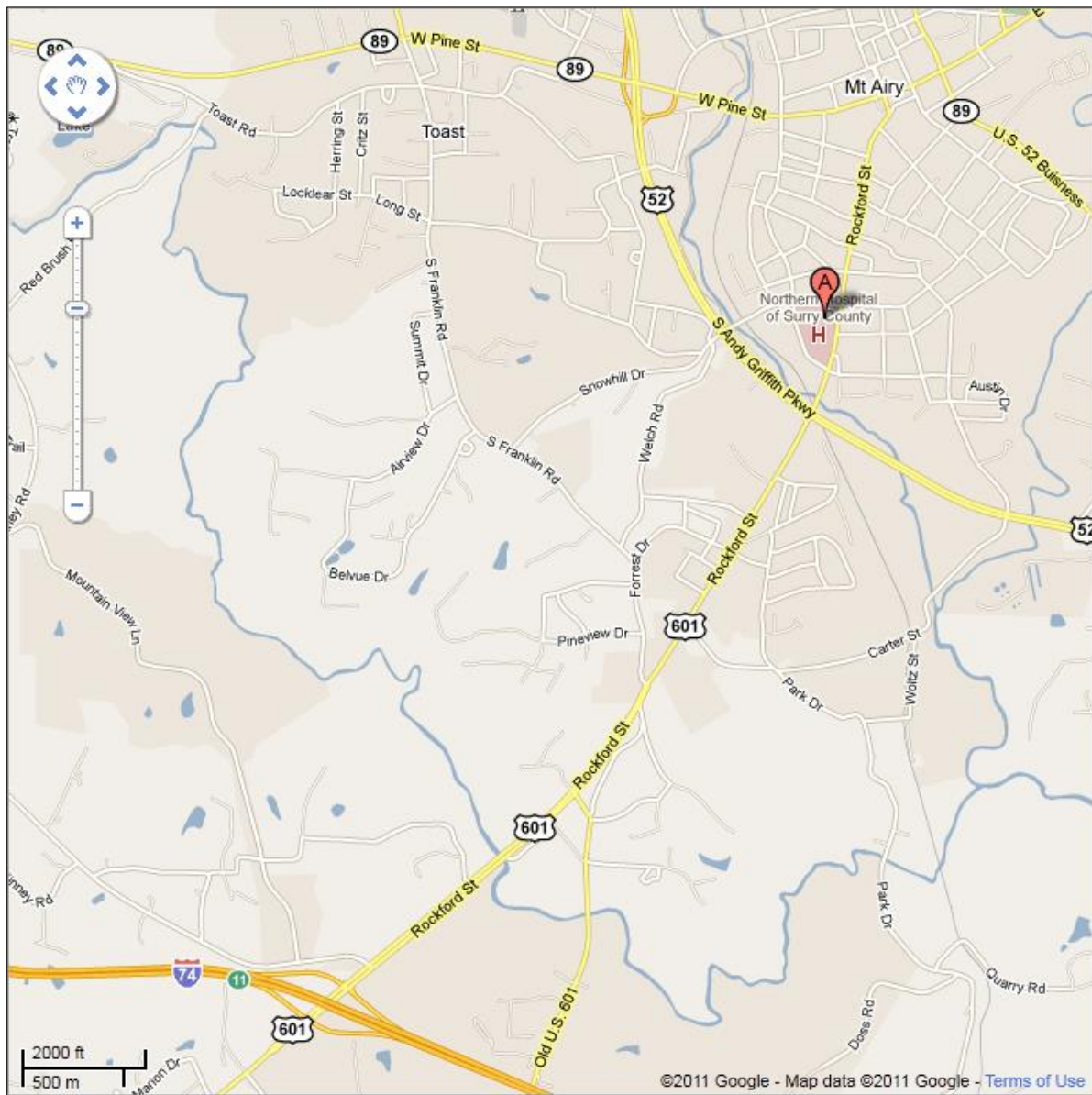


Figure SOP 1A-19. Location of Northern Hospital of Surry County (image from Google Maps).

Milepost 215 (near Galax, VA)

Twin County Regional Hospital

200 Hospital Drive

Galax, VA 24333

(276) 236-8181

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.673312, -80.918623

+36° 40' 23.92", -80° 55' 7.04"

UTM: 507271.5 E, 4058635.9 N; 17 S

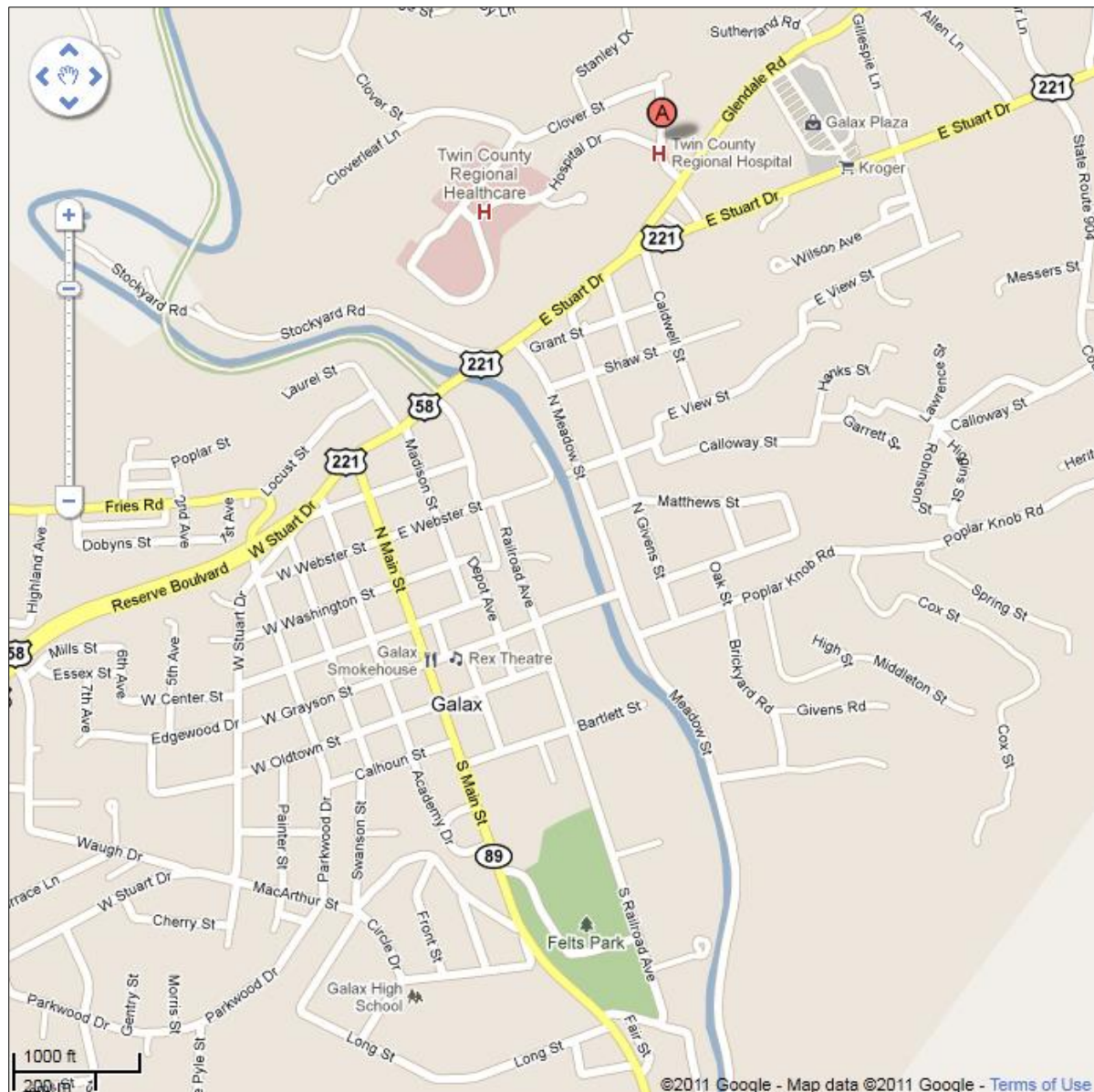


Figure SOP 1A-20. Location of Twin County Regional Hospital (image from Google Maps).

Milepost 230 (near Sparta, NC)

[Alleghany Memorial Hospital](#)

233 Doctors St.

Sparta, NC 28675

(336) 372-5511

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.509486, -81.114639

+36° 30' 34.15", -81° 6' 52.70"

UTM: 489734.7 E, 4040466.4 N; 17 S

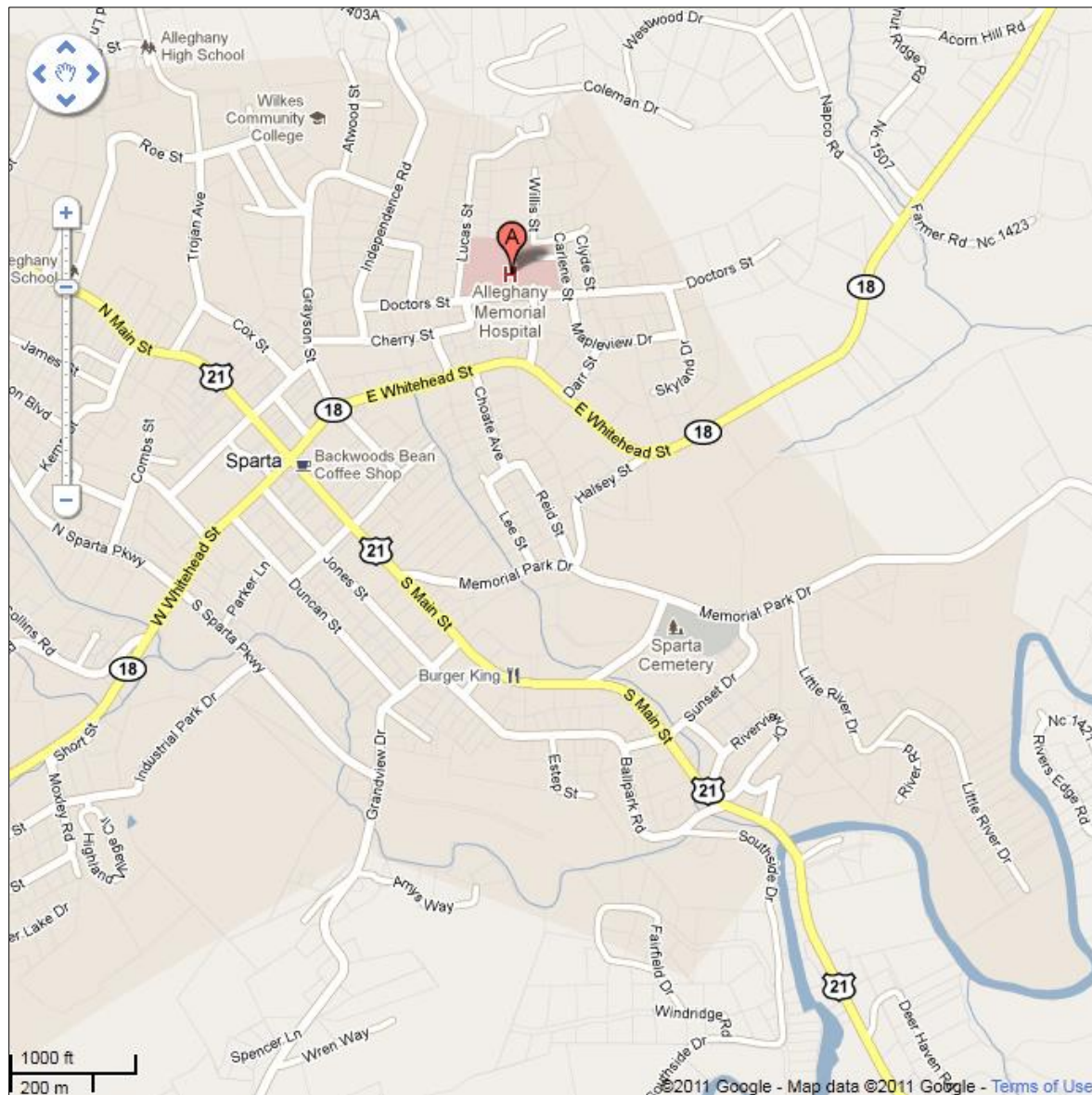


Figure SOP 1A-21. Location of Alleghany Memorial Hospital (image from Google Maps).

Milepost 250 (near Wilkesboro, NC)

Wilkes Regional Medical Center

1370 West D Street

North Wilkesboro, NC 28659

(336) 651-8100

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.159313, -81.158220

+36° 9' 33.53", -81° 9' 29.59"

UTM: 485768.7 E, 4001630.4 N; 17 S

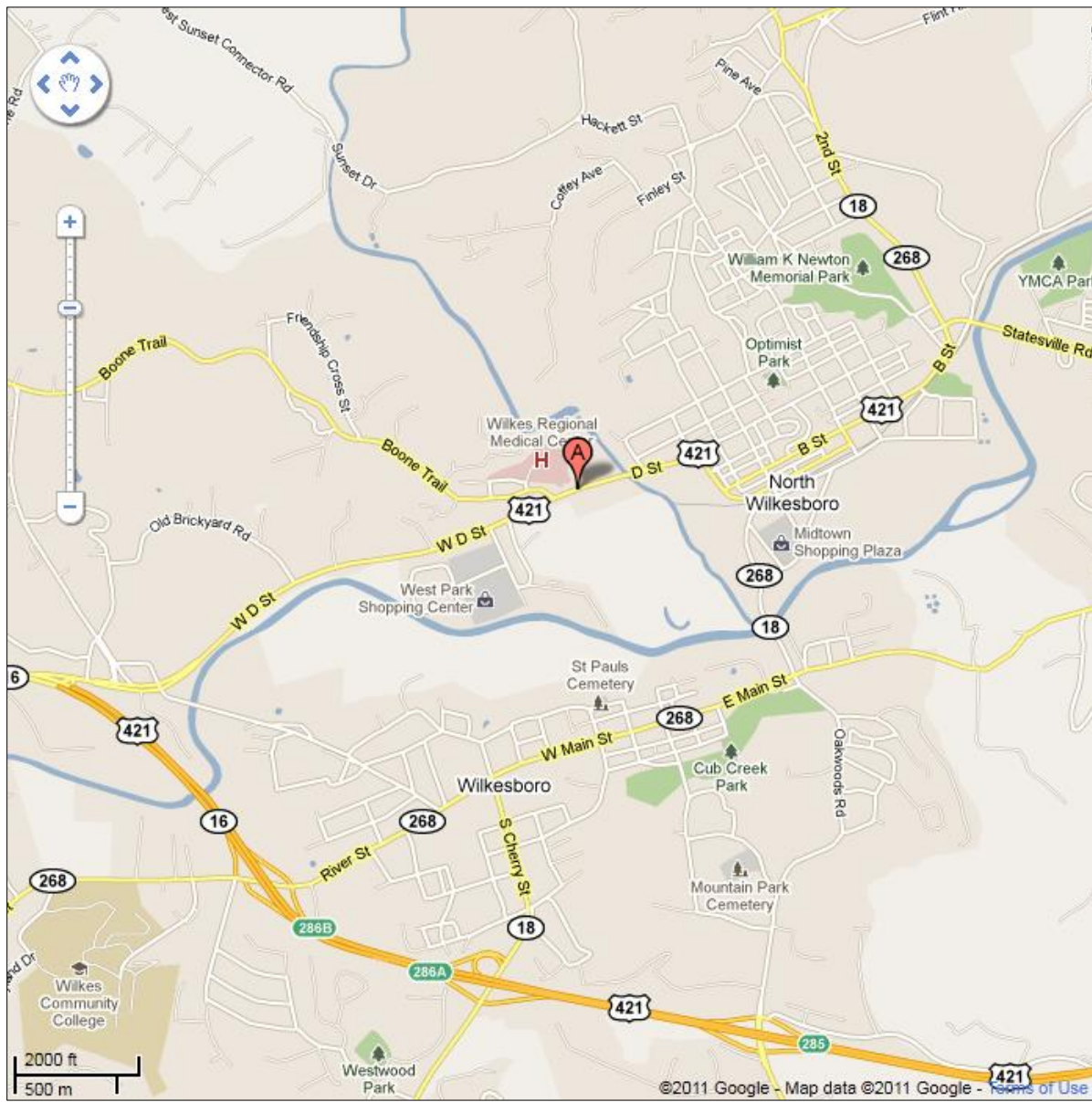


Figure SOP 1A-22. Location of Wilkes Regional Medical Center (image from Google Maps).

Milepost 260 (near West Jefferson, NC)

Ashe Memorial Hospital

200 Hospital Avenue

Jefferson, NC 28640

(336) 246-7101

Open 24 Hours a day, 7 days a week

Approximate Coordinates:

36.423797, -81.458529

+36° 25' 25.67", -81° 27' 30.70"

UTM: 458896 E, 4031053.1 N; 17 S

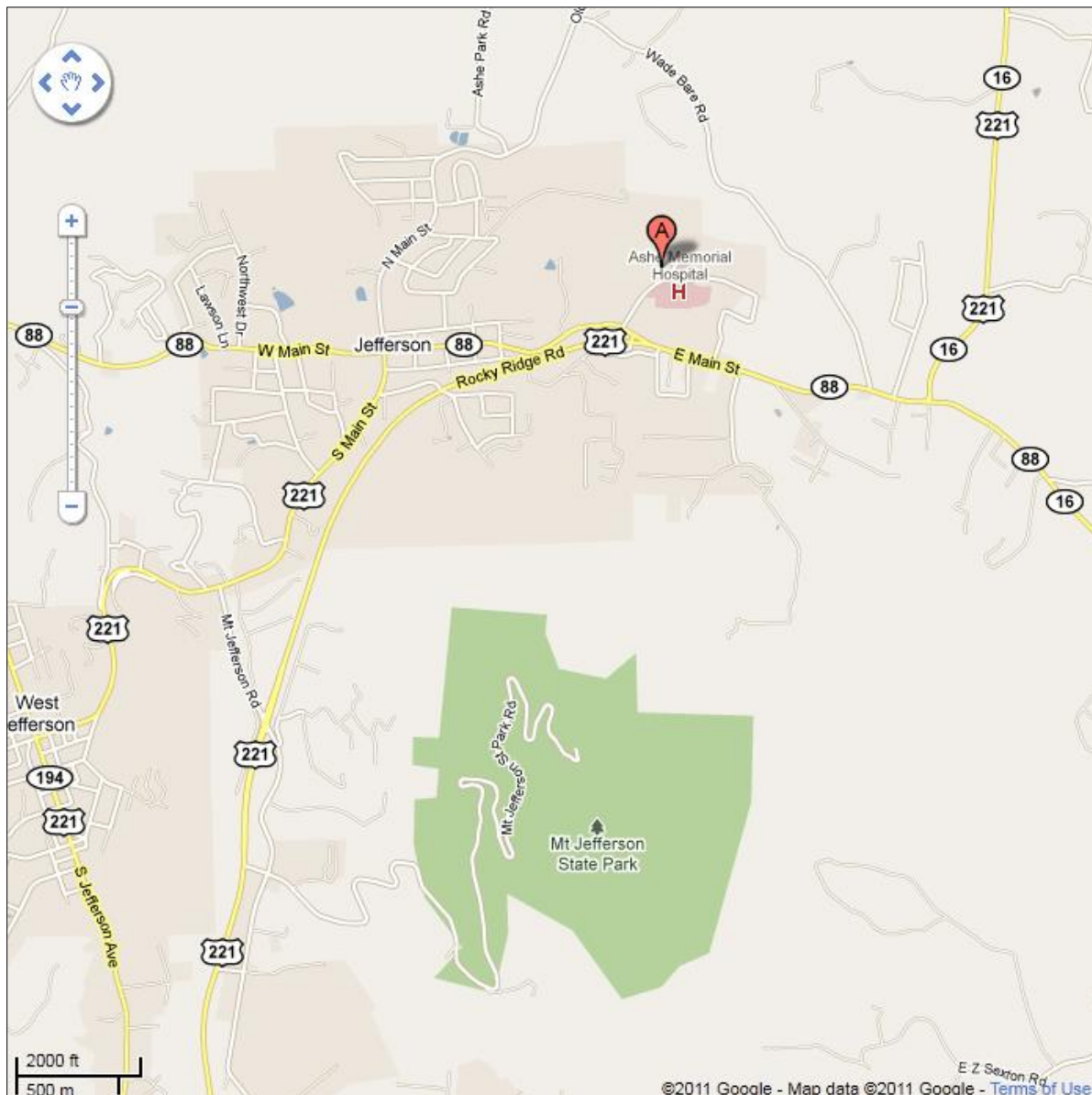


Figure SOP 1A-23. Location of Ashe Memorial Hospital (image from Google Maps).

Milepost 260 (near West Jefferson, N.C.) [cont.]

Watauga Medical Center

336 Deerfield Road

Boone, N.C. 28607

(828) 262-4100

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.198578, -81.651853

+36° 11' 54.88", -81° 39' 6.67"

UTM: 441397.3 E, 4006170.9 N; 17 S

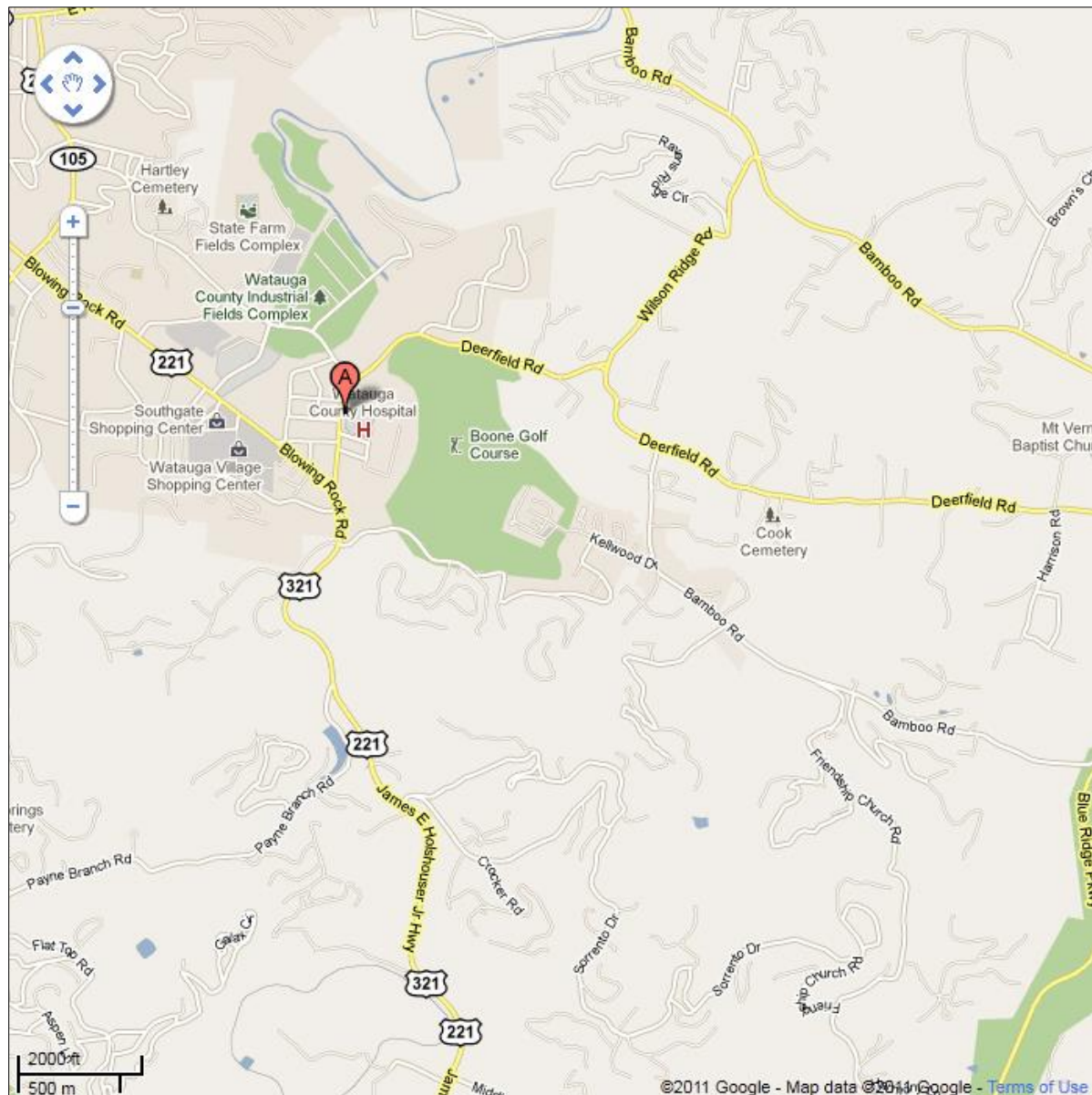


Figure SOP 1A-24. Location of Watauga Medical Center (image from Google Maps).

Milepost 305 (near Linville, N.C.)

Charles A. Cannon, Jr. Memorial Hospital

434 Hospital Drive

Linville, N.C. 28646

(828) 737-7000

Open 24 hours a day, 7 days a week

Approximate Coordinates:

36.067609, -81.885605

+36° 4' 3.39", -81° 53' 8.18

UTM: 420249.7 E, 3991810.2 N; 17 S

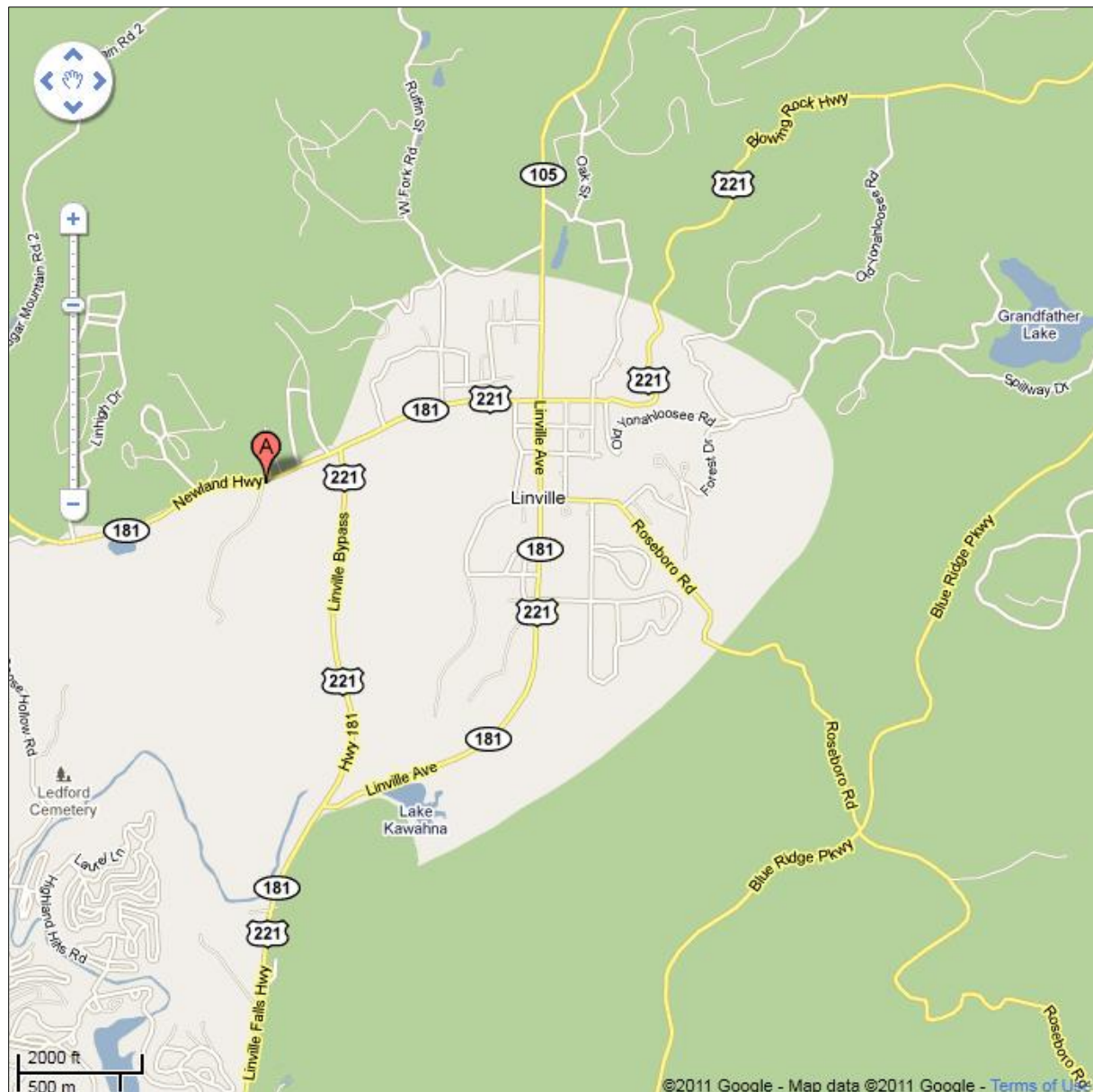


Figure SOP 1A-25. Location of Charles A. Cannon, Jr. Memorial Hospital (image from Google Maps).

Milepost 330 (near Spruce Pine, NC)

Blue Ridge Regional Hospital

125 Hospital Dr.

Spruce Pine, NC 28777

(877) 777-8230

Open 24 hours a day, 7 days a week

Approximate Coordinates:

35.910817, -82.063261

+35° 54' 38.94", -82° 3' 47.74"

UTM: 404061.3 E, 3974579 N; 17 S

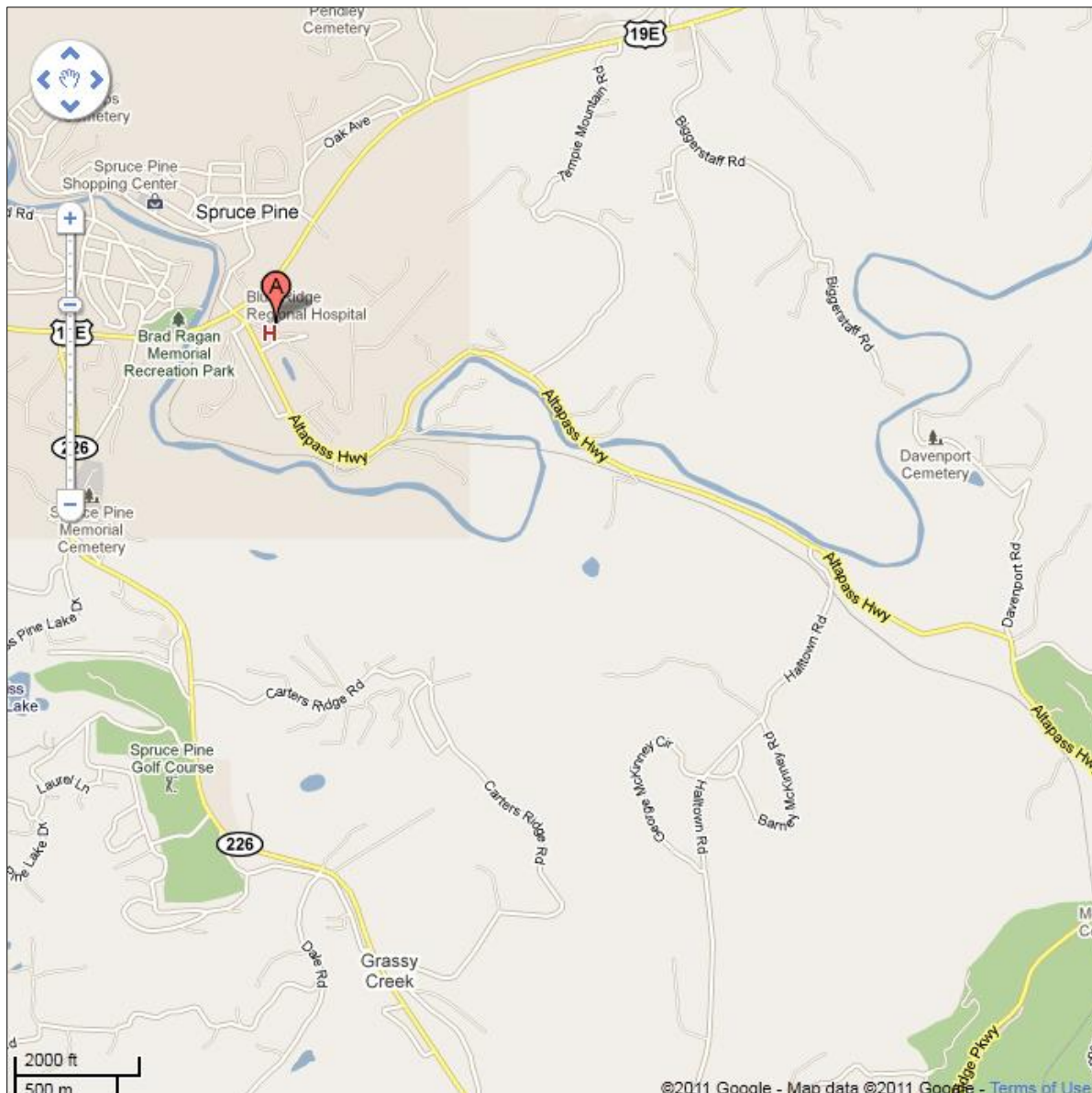


Figure SOP 1A-26. Location of Blue Ridge Regional Hospital (image from Google Maps).

Milepost 345 (near Marion, NC)

McDowell Hospital Emergency Department

430 Rankin Dr.

Marion, NC 28752

(828) 659-5000

Open 24 hours a day, 7 days a week

Approximate Coordinates:

35.663543, -82.026612

+35° 39' 48.75", -82° 1' 35.80"

UTM: 407080.9 E, 3947116.9 N; 17 S

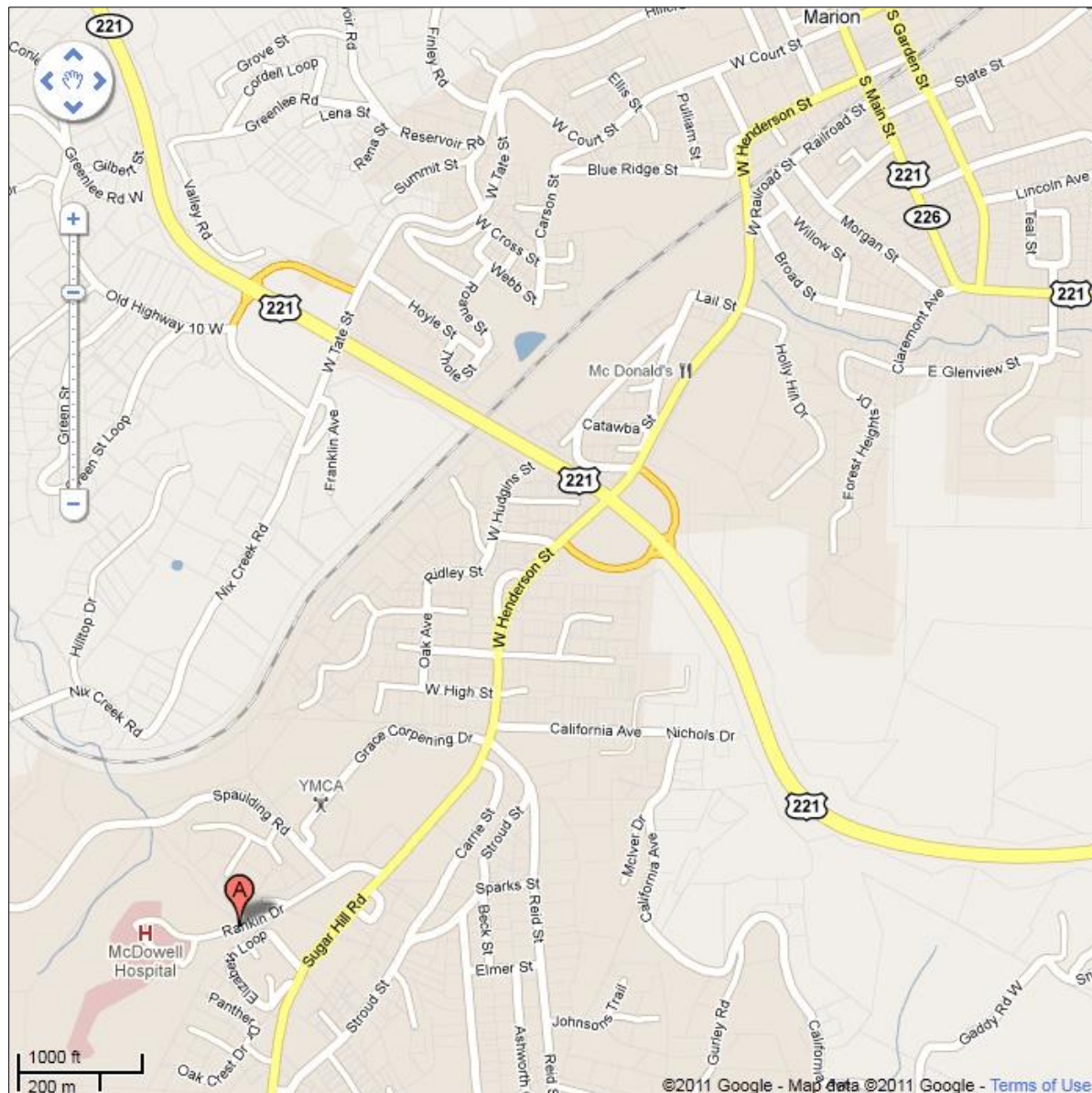


Figure SOP 1A-27. Location of McDowell Hospital Emergency Department (image from Google Maps).

Milepost 385 (near Asheville, NC including Swannanoa and Biltmore)

Mission Hospital—Memorial Campus

509 Biltmore Avenue

Asheville, NC 28801

(828) 213-1948

Open 24 hours a day, 7 days a week

Approximate Coordinates:

35.576660, -82.549921

+35° 34' 35.98", -82° 32' 59.72"

UTM: 359561 E, 3938100.8 N; 17 S

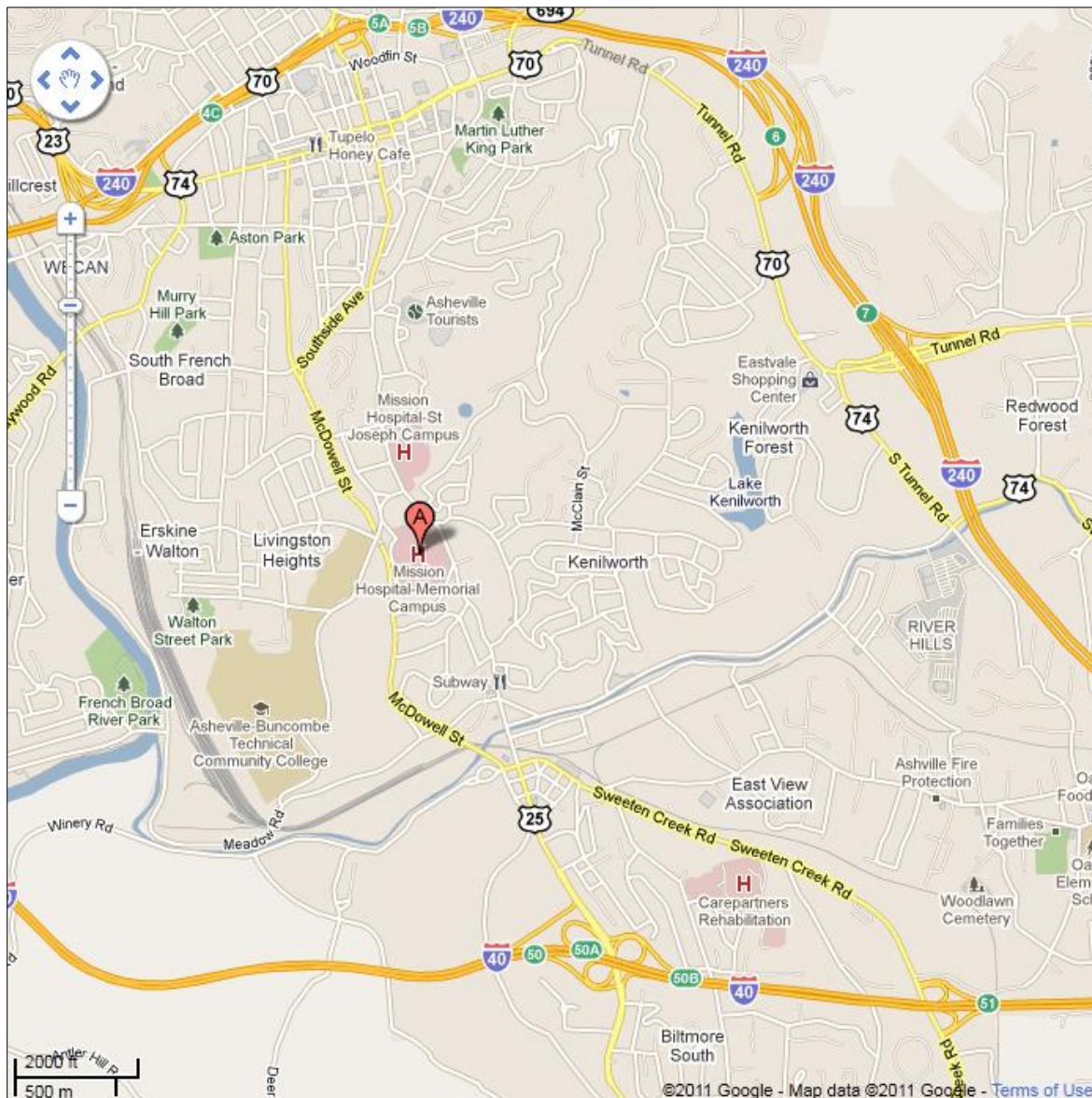


Figure SOP 1A-28. Location of Mission Regional Hospital—Memorial Campus (image from Google Maps).

Milepost 400 (near Interstate 26)

Sisters of Mercy Urgent Care South

1833 Hendersonville Road

Asheville, NC 28803

(828) 274-1462

Weekdays 8am – 5:30pm, weekends 9am – 5pm

**call the inclement weather and emergency hotline at 828-281-0455 in the event of inclement weather for any closings or delays.*

Approximate Coordinates:

35.503481, -82.524278

+35° 30' 12.53", -82° 31' 27.40"

UTM: 361759.1 E, 3929947.6 N, 17 S

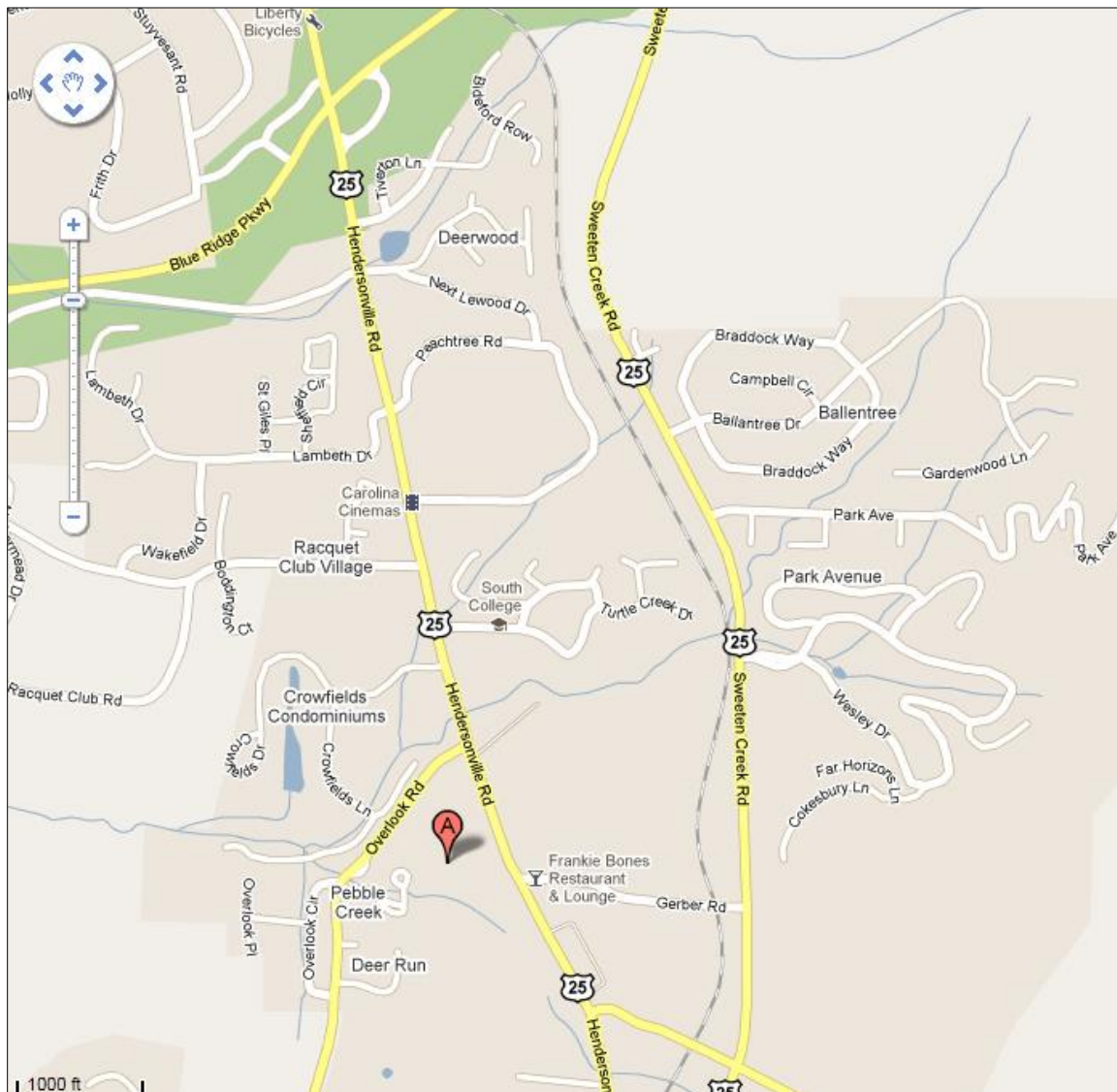


Figure SOP 1A-29. Location of Sisters of Mercy Urgent Care South (image from Google Maps).

Milepost 415 (near Brevard, NC)

Transylvania Regional Hospital

260 Hospital Drive

Brevard, NC

(828) 883-5243

Available 24 hours a day, 7 days a week

Approximate Coordinates:

35.256305, -82.712498

+35° 15' 22.70", -82° 42' 44.99"

UTM: 344212.8 E, 3902811 N, 17 S

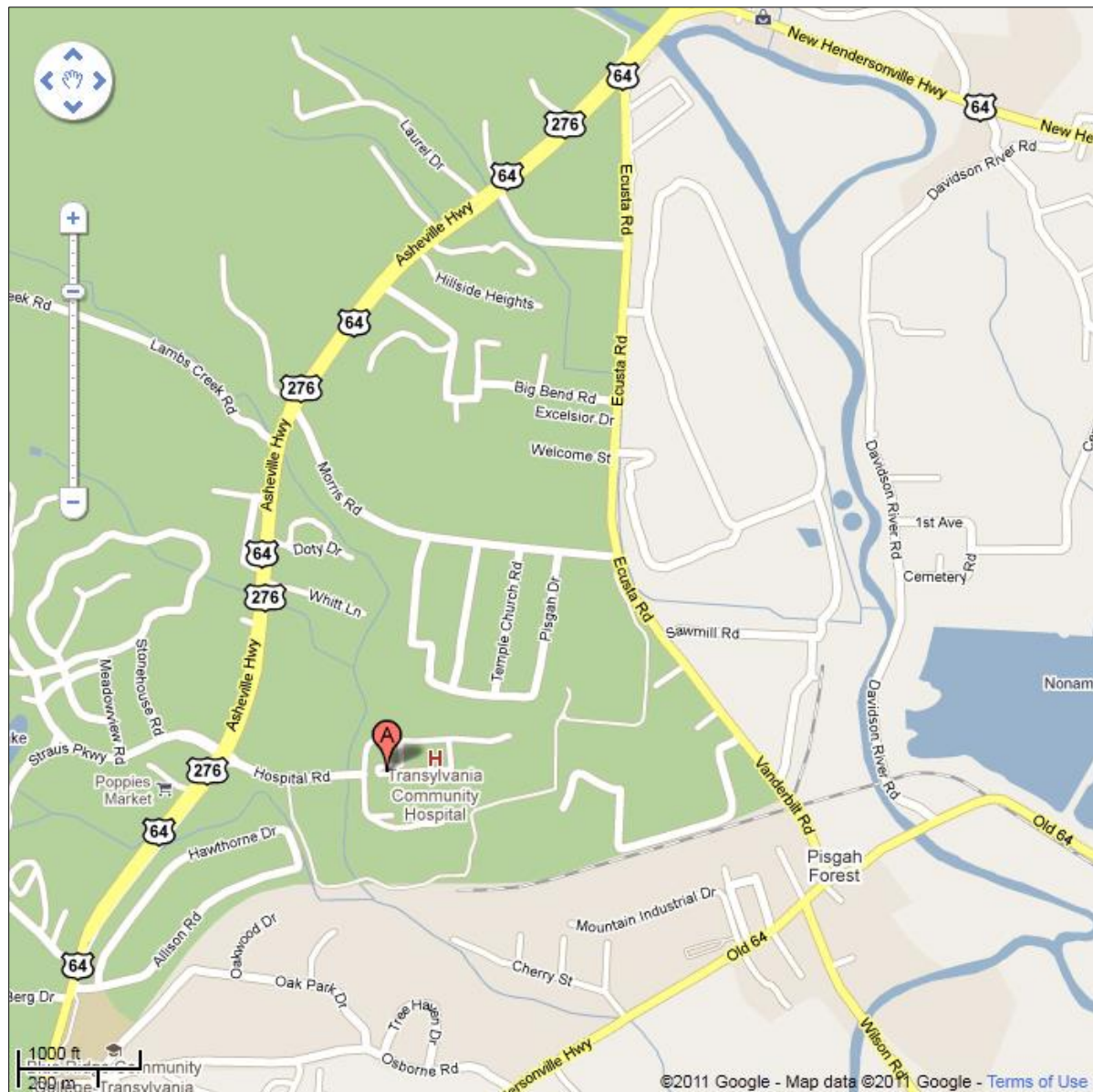


Figure SOP 1A-30. Location of Transylvania Regional Hospital (image from Google Maps).

Milepost 415 (near Brevard, NC) [cont.]

Sisters of Mercy Urgent Care Brevard

22 Trust Lane

Brevard, NC 28712

(828) 883-2600

Mon, Wed, Thurs: 9am–4pm; Sat: 10am–4 pm

Closed Tues and Sun

Please call our inclement weather and emergency hotline at 828-281-0455 in the event of inclement weather for any closings or delays.

Approximate Coordinates:

35.238361, -82.732641

+35° 14' 18.10", -82° 43' 57.51"

UTM: 342345.4 E, 3900852.5 N

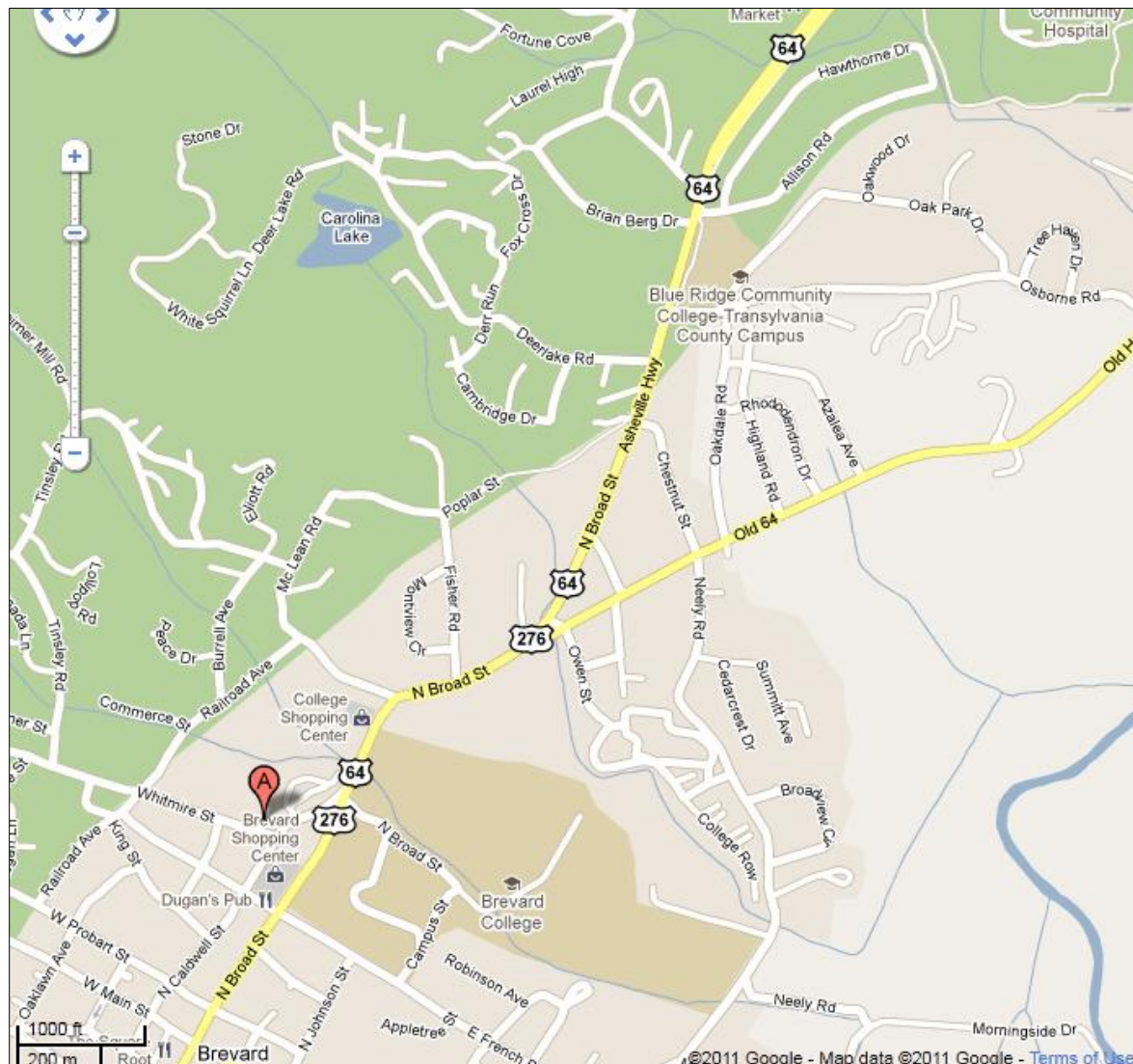


Figure SOP 1A-31. Location of Sisters of Mercy Urgent Care Brevard (image from Google Maps).

Milepost 440 (near Waynesville, NC)

Haywood Regional Medical Center

262 Leroy George Drive

Clyde, NC 28721

(800) 456-7311

Open 24 hours a day, 7 days a week

Approximate Coordinates:

35.526067, -82.942382

+35° 31' 33.84", -82° 56' 32.58"

UTM: 323885.2 E, 3933119.5 N, 17 S

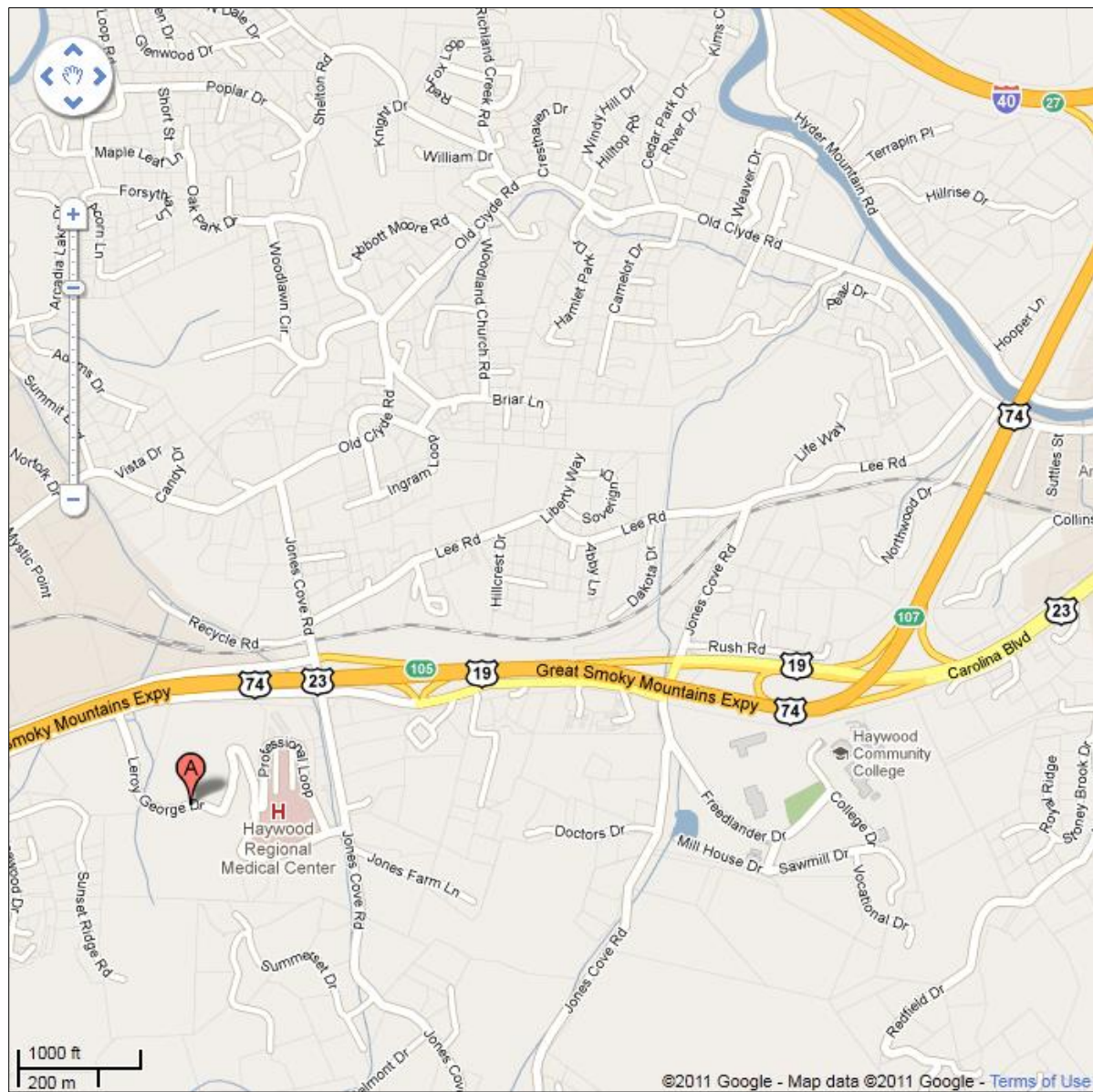


Figure SOP 1A-31. Location of Haywood Regional Medical Center (image from Google Maps).

Milepost 469 (near Cherokee, NC)

Swain Community Hospital

45 Plateau Street

Bryson City, NC 28713

(828) 488-2155

Open 24 hours a day, 7 days a week

Approximate Coordinates:

35.434507, -83.444964

+35° 26' 4.23", -83° 26' 41.87"

UTM: 278056.5 E, 3923976.4 N, 17 S

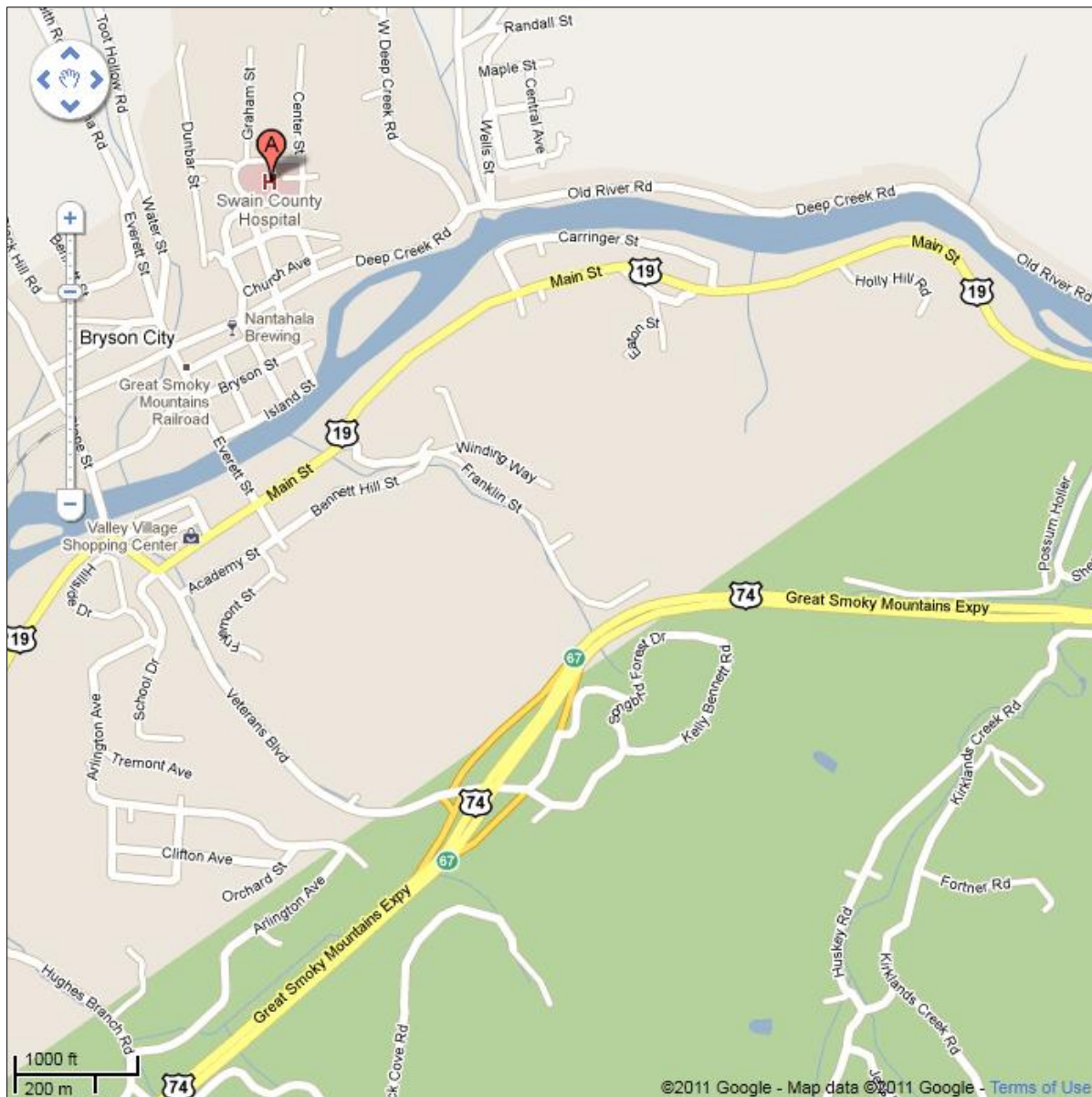


Figure SOP 1A-32. Location of Swain County Hospital (image from Google Maps).

Appendix B: InReach Operation

Big South Fork National River and Recreation Area (BISO) and Obed Wild and Scenic River (OBRI)

Start of the day

1. Post itinerary on sign-out log at BISO Resource Management office.
2. Send email or text message to APHN program manager or designated alternate indicating itinerary and estimated time you will be returning to office.
3. Send InReach message “I&M in the park” at the start of the day and at each site that you visit.
4. Turn InReach tracking on.

List of individuals receiving emails:

- gary_cruz@nps.gov
- brian_mitchell@nps.gov
- brian_witcher@nps.gov
- evan_raskin@nps.gov
- james_d_hughes@nps.gov
- matt_hudson@nps.gov
- anthony_garner@nps.gov
- tom_blount@nps.gov

End of the day

1. If crew is working in the field past anticipated return time, send InReach preset message “I&M delayed but everything is OK.”
2. At the end of the day, upon returning to the BISO Resource Management office or your place of lodging, send InReach message “I&M leaving the park” & turn tracking off.

Crews failing to check-in via InReach

- If you fail to check in at your stated time, the APHN program manager or designated alternate will do the following:
 - Check their email for the latest InReach Message.
 - Contact the crew via InReach Beacon
 - Contact the crew via cell phone

- Contact crew via radio
- If contact cannot be made by the above methods, the APHN program manager or designated alternate will log in to the [Garmin website](#) and track location of the crew.
- If the last tracked location is not safely outside the park, the APHN program manager or designated alternate will contact Park Dispatch and ask that resources be sent to ascertain the status of the field crew.

Blue Ridge Parkway

Start of the day

1. Contact Park Dispatch via radio 800 or phone (828) 298-2491.
2. Identify using radio call number.
3. Provide the following:
 - a. Project you will be working on (i.e. vegetation, water quality)
 - b. Start time
 - c. Expected end time
 - d. Number of people in party
 - e. Vehicle information
 - f. Mile post range (i.e., 20–70) where you will be working
4. Send InReach message “I&M in the park” at the start of the day and at each site that you visit.
5. Turn InReach tracking on.

List of individual receiving emails

- bambi_teague@nps.gov
- brian_mitchell@nps.gov
- brian_witcher@nps.gov
- BLRI_Communications@nps.gov
- debra_flowers@nps.gov
- evan_raskin@nps.gov
- neal_labrie@nps.gov
- robert_emmott@nps.gov

End of the day

1. If crew is working in the field past anticipated return time, send InReach preset message “I&M delayed but everything is OK.”
2. At the end of the day, send InReach message “I&M leaving the park” & turn off InReach tracking.
3. Radio Park dispatch, identify yourself using your radio call number, state that you are “Out of service.”

Crews failing to check-in with Park Dispatch

- If you fail to check in at your stated time Park Dispatch will do the following:
 - Contact you via radio
 - Check their email for the latest InReach Message.
 - Contact the APHN Program Manager, or designated alternate, via phone and email
 - Brian Witcher Office 828-407-5654, Cell 828-484-6331, email brian_witcher@nps.gov
 - APHN Program Manager or designated alternate will attempt to contact the crew using
 - Check their email for the latest InReach Message.
 - Contact the crew via InReach Beacon
 - Contact the crew via cell phone
 - Contact crew via radio
 - If contact cannot be made by the above methods, the APHN Program Manager or designated alternate will log in to the [Garmin website](#) and track location of the crew.
- Login Procedures:
 - Email address: brian_witcher@nps.gov
 - Password: Aphnbiso1!
- If the last tracked location is not safely outside the park the APHN program manager or designated alternate will contact Park Dispatch and ask that resources be sent to ascertain the status of the field crew.